

**DEPARTMENT OF TRANSPORTATION**

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**\*\* WARNING \*\* WARNING \*\* WARNING \*\* WARNING \*\***

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December 15, 2003

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04-0120F4  
ACBRIM-080-1(095)N

Addendum No. 17

Dear Contractor:

This addendum is being issued to the contract for construction on State highway in SAN FRANCISCO COUNTY IN SAN FRANCISCO FROM 0.6 KM TO 1.3 KM EAST OF THE YERBA BUENA TUNNEL EAST PORTAL.

Submit bids for this work with the understanding and full consideration of this addendum. The revisions declared in this addendum are an essential part of the contract.

Bids for this work will be opened on January 21, 2004.

This addendum is being issued to revise the Project Plans, the Notice to Contractors and Special Provisions, and the Proposal and Contract.

Project Plan Sheets 410, 558, 566, 588, 612, 613, 615, 624, 866, 1121, 1122, 1123, and 1124 are revised. Half-sized copies of the revised sheets are attached for substitution for the like-numbered sheets.

In the Special Provisions, Section 5-1.01, "WORKING DRAWINGS," is revised as attached.

In the Special Provisions, Section 5-1.12, "PROJECT INFORMATION," subsection, "INFORMATION HANDOUT," subsection "Structure Materials Information," item "I" is deleted.

In the Special Provisions, Section 5-1.12, "PROJECT INFORMATION," subsection "INFORMATION HANDOUT," subsection "District Materials Information," under Items available for inspection, the following items are added:

- "L. Approved plans and specifications for the Dehumidifier System and Elevator by the California State Fire Marshall, dated September 15, 2003.
- M. Settlement Agreement regarding Burma Road Easement and Pier 7 Temporary Construction Easement, between City of Oakland and State of California Department of Transportation, dated April 18, 2002.
- N. Illustration of gross notch identified in Item B.3 of "Steel Structures/Shop Welding/Welding of Closed Ribs to Box Shell Plate" of these special provisions.
- O. Sample Advance Payment Bond form for partial payments referenced in "Payments" of these special provisions.
- P. Sample First Demand Bank Guarantee form for partial payments referenced in "Payments" of these special provisions."

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In the Special Provisions, Section 5-1.27, "PAYMENTS," the eleventh and twelfth paragraphs are revised as follows:

"For the purpose of making partial payments for materials furnished but not incorporated in the work pursuant to these special provisions and Section 9-1.06, "Partial Payments," of the Standard Specifications, the total amount of \$200,000,000 for each monthly pay estimate shall be deemed to be the maximum value which will be recognized for progress payment purposes.

To be eligible for these payments, the Contractor shall furnish a bond or first demand bank guarantee to secure the value of potential partial payments for material furnished but not incorporated in the work pursuant to these special provisions and Section 9-1.06, "Partial Payments," of the Standard Specifications. The bond or first demand bank guarantee shall be in a sum equal to at least \$200,000,000, and shall, at a minimum, match the terms of the sample bond or first demand bank guarantee forms identified in "Project Information" elsewhere in these special provisions. The Contractor shall certify in writing to the Engineer that the proposed bonding company or bank complies with these special provisions. The bonding company shall be licensed to do business in the State of California, and shall be certified to write a \$250,000,000 bond by the United States Department of the Treasury. The bank shall have United States operations with a minimum rating of "A-" by either AM Best or Standard & Poor. All alterations, extensions of time, extra and additional work, and other changes authorized by these special provisions or any part of the contract may be made without securing the consent of the surety of the bond or the bank."

In the Special Provisions, Section 10-1.10, "TRANSPORTATION FOR THE ENGINEER," the eighth paragraph is revised as follows:

"The Contractor shall provide insurance coverage under the Federal Longshoremen's and Harbor Workers Compensation Act, the Jones Act and the Marine Act with respect to work performed from, or by use of, vehicles on any navigable water of the United States, including liability insurance for watercraft operations. The insurance coverage shall contain a combined single limit of at least \$50,000,000 per occurrence and \$50,000,000 aggregate. At the option of the Contractor, liability insurance for watercraft operations may be covered under a separate Protection and Indemnity policy."

In the Special Provisions, Section 10-1.11, "PROGRESS SCHEDULE (CRITICAL PATH METHOD)," subsection "BASELINE SCHEDULE," Item E of the ninth paragraph is revised as follows:

- "E. Preparation, submittal and approval of shop and working drawings and material samples, showing time, as specified elsewhere, for the Engineer's review."

In the Special Provisions, Section 10-1.16, "WORKING DRAWING SUBMITTAL SCHEDULE," is revised as attached.

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In the Special Provisions, Section 10-1.28, "VIBRATION MONITORING," subsection "VIBRATION MONITORING PERSONNEL," is revised as follows:

**"VIBRATION MONITORING PERSONNEL**

The Contractor's vibration-monitoring personnel shall have the qualifications specified herein. These personnel may be on the staff of the Contractor. However, they shall not be employed nor compensated by subcontractors, or by persons or entities hired by subcontractors, who will provide other services or material for the project.

The Contractor's vibration-monitoring personnel shall include a Vibration Instrumentation Engineer who meets one of the following minimum qualifications:

1. Registered Geophysicist or Professional Engineer in the State of California with at least 5 years of experience in the installation and use of vibration-monitoring instrumentation and data interpretation.
2. Graduate level degree from an accredited University in Physics or Acoustics with at least 5 years experience in the installation and use of vibration-monitoring instrumentation and data interpretation.

The Vibration Instrumentation Engineer shall:

1. Be on site and supervise the initial installation of each vibration-monitoring instrument.
2. Supervise interpretations of vibration-monitoring data.

The Contractor's vibration-monitoring personnel shall be subject to the Engineer's approval."

In the Special Provisions, Section 10-1.28, "VIBRATION MONITORING," subsection "VIBRATION MONITORING," the third, fourth and fifth paragraphs are revised as follows:

"The equipment shall be set up in a manner such that an immediate warning is given when particle velocity equal to or exceeding 10 millimeter per second is produced. The warning emitted by the vibration-monitoring equipment shall be instantaneously transmitted to the responsible person designated by the Contractor by means of warning lights, audible sounds or electronic transmission.

Monitoring equipment shall be stationed within 0.9 meter of the exterior of designated buildings on the side facing the Contractor's work site. For buildings whose frontage exceeds 60 meter, at least 2 monitors shall be utilized at that location.

When any reading on monitoring equipment equals or exceeds 10 millimeters per second, work shall immediately cease and the Contractor shall immediately notify the Engineer. If directed by the Engineer, the Contractor shall submit within 24 hours a detailed specific plan of action so that the vibration limits are not violated. The Contractor shall take whatever action is necessary to reduce and maintain the monitoring equipment reading below a particle velocity of 10 millimeters per second."

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In the Special Provisions, Section 10-1.35, "EPOXY ASPHALT CONCRETE SURFACING," subsection "SOLE SOURCE SUPPLIER," is revised as follows

"The components for epoxy asphalt binder and epoxy asphalt bond coat shall be obtained from the following manufacturer:

VENDOR ADDRESS AND PHONE NUMBER
CHEMCO SYSTEMS, INC 2800 BAY ROAD REDWOOD CITY, CA 94063  TEL: 650-261-3790 FAX: 650-261-3799  CONTACT: ROBERT GAUL OR JOHN BORS

The price quoted by the manufacturer for epoxy asphalt binder and epoxy asphalt bond coat are as follows:

Epoxy asphalt binder	\$5.82 per kilogram
Epoxy asphalt bond coat	\$5.82 per kilogram

Epoxy asphalt binder and epoxy asphalt bond coat prices include delivery to the batch plant site.

The above unit prices are based on a minimum combined quantity of binder and bond coat of 250,000 kilograms, delivered in bulk to any site within 64 kilometers of the San Francisco-Oakland Bay Bridge. Prices do not include sales tax. Payment terms are net 45 days after delivery of material.

Price and conditions quoted include all discounts and will be firm for all orders placed on or before December 31, 2005, provided delivery is accepted within 12 months after the order is placed. Total price will be increased by 5% for orders placed with ChemCo Systems, Inc. for each year thereafter, provided that delivery is accepted within 12 months after the order is placed.

The epoxy asphalt bond coat and epoxy asphalt binder prices quoted include all materials, technical advice, and inspections by a qualified representative of the manufacturer, both at the batch plant and during installation, along with a final inspection of the in-place epoxy asphalt concrete. The prices also include consultation on the quality control plan and manufacturer's certificates of compliance for both the epoxy asphalt binder and epoxy asphalt bond coat. The prices also include the rental of a meter/mix machine to process the epoxy asphalt binder at the batch plant and the rental of a spray distributor machine to apply the bond coat, each for a period of 60 continuous calendar days."

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In the Special Provisions, Section 10-1.36, "TEMPORARY TOWERS," subsection "WORKING DRAWINGS," the table in the first paragraph is revised as follows:

Location	Review Time
AE and AW	50 Working Days
BE and BW	50 Working Days
CE and CW	50 Working Days
DE and DW	50 Working Days
EE and EW	50 Working Days
FE and FW	50 Working Days
GE and GW	50 Working Days
HE and HW	50 Working Days

In the Special Provisions, Section 10-1.36, "TEMPORARY TOWERS," subsection "TEMPORARY TOWER DESIGN," the following paragraph is added after the sixth paragraph:

"In addition to the above design criteria and design codes, temporary tower design shall also conform to the wind loading requirement specified in Section 10-1.51, "Steel Structures," subsection "Assembly," of these special provisions."

In the Special Provisions, Section 10-1.36, "TEMPORARY TOWERS," subsection "TEMPORARY TOWER DESIGN," subsection "Seismic Design Loads," the first paragraph is revised as follows:

"Temporary towers shall be designed to resist horizontal seismic loads applied to the tower system in combination with the appropriate vertical loads covering all significant construction stages. Seismic design loads need not be considered during lifting operations. Wind design loads may be reduced during lifting operations. The seismic analyses shall consider the interactions of the tower system with the bridge superstructure at all appropriate stages as well as the hydrodynamic added mass associated with the submerged tower foundation and fenders."

In the Special Provisions, Section 10-1.36, "TEMPORARY TOWERS," subsection "TEMPORARY TOWER DESIGN," subsection "Design Load Combinations" is revised as follows:

"Design Load Combinations

Temporary towers shall be designed using the following load combinations:

- 1.1 DL + 1.3 LL
- 1.0 (DL + LL + 0.5 Wind + Current + Vessel Impact)
- 1.0 (DL + LL + EQ)
- 1.0 (DL + LL + Wind)"

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In the Special Provisions, Section 10-1.36, "TEMPORARY TOWERS," subsection "TEMPORARY TOWER DESIGN," subsection "Temporary Tower Foundations- Driving System Submittal," the fifth paragraph is revised as follows:

"The Contractor shall use the driving system and installation methods described in the approved driving system submittal for each temporary tower location. Any change in hammers from those submitted and approved by the Engineer shall also meet the requirements for driving system submittals. Revised and new driving system submittals shall be approved by the Engineer prior to using corresponding driving systems on temporary tower piling. The Contractor shall allow the Engineer 15 working days to review each revised and each new driving system submittal after a complete set has been received, as determined by the Engineer."

In the Special Provisions, Section 10-1.37, "PRESTRESSING CONCRETE," subsection "WORKING DRAWINGS," the fifth and sixth paragraphs are revised as follows:

"After complete working drawings and supplement are submitted to the Engineer, the Contractor shall allow the Engineer 60 working days to review and approve the working drawings and supplement. No stressing operation shall be performed without the Engineer's approval of the working drawings and supplement.

After a submittal has been approved, if the Contractor submits a revised prestressing working drawing submittal, the Contractor shall allow the Engineer additional 10 working days to review the revised submittal."

In the Special Provisions, Section 10-1.38, "HIGH STRENGTH PRESTRESSING ROD (75 MM)," subsection "WORKING DRAWINGS," the last paragraph is revised as follows:

"After complete working drawings and supplement are received by the Engineer, the Contractor shall allow the Engineer 25 working days to review the submittal. No manufacture of the prestressing rods shall begin until complete working drawings and supplement are reviewed and approved, in writing, by the Engineer."

In the Special Provisions, Section 10-1.40, "CONCRETE STRUCTURES," subsection "MASS CONCRETE," subsection "Thermal Control Plan," the eleventh and twelfth paragraphs are revised as follows:

"After the completion of the mass concrete element, the Contractor shall remove all formwork, equipment and materials from the mass concrete element and clean the surface for the Engineer to measure the crack intensity. Surface crack intensity will be determined after monitoring shows the maximum internal temperature has dropped to within 5°C of the outer concrete temperature. Cracking shall be considered excessive if a surface crack intensity on any face of a concrete surface where cracks greater than 0.15 mm in width measure more than 1.0 m in cumulative length within any 2 m square area or where individual cracks greater than 0.15 mm in width measure more than 300 mm in length.

In case of excessive cracking, the Contractor shall suspend work on subsequent mass concrete placements, submit a written explanation of the thermal cracking and additional steps to be taken in the future to eliminate excessive cracking, and submit proposed modifications in writing to the Engineer for review. Concrete placement may not resume until the Engineer approves the proposed modifications."

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In the Special Provisions, Section 10-1.40, "CONCRETE STRUCTURES," subsection "FALSEWORK," the table in the third paragraph is revised as follows:

Structure or Portion of Structure	Total Review Time – Working days
Pier W2 Cap Beam Construction	50
Pier E2 Crossbeam Construction	50

In the Special Provisions, Section 10-1.41, "SPHERICAL BUSHING BEARING (PIER E2)," subsection "WORKING DRAWINGS," the sixth paragraph is revised as follows:

"Complete working drawings and supplement shall be submitted to the Engineer within 80 working days after the contract is awarded. After complete working drawings and supplement are received by the Engineer, the Contractor shall allow the Engineer 40 working days to review the submittal. No fabrication of test specimen and test fixtures of the spherical bushing bearing shall begin until complete working drawings and supplement are reviewed and a preliminary approval is given, in writing, by the Engineer."

In the Special Provisions, Section 10-1.41, "SPHERICAL BUSHING BEARING (PIER E2)," subsection "FRICTION TEST," the second paragraph is revised as follows:

"The acceptance criteria for friction tests shall be the following:

- A. The coefficient of friction value shall be computed by dividing the force parallel to the sliding or rotating surface, which corresponds to sliding or rotating movement by the force normal to the sliding or rotating surface.
- B. The coefficient of friction for all tests shall meet the requirements as specified in the tables as shown on the plans.
- C. No bond failure of wearing surfaces."

In the Special Provisions, Section 10-1.41, "SPHERICAL BUSHING BEARING (PIER E2)," subsection "WEAR TEST," the second paragraph is revised as follows:

"The acceptance criteria for wear tests shall be the following:

- A. The coefficient of friction for each bearing specimen shall meet the requirements as specified in the tables as shown on the plans."

In the Special Provisions, Section 10-1.42, "FURNISH SPHERICAL BUSHING RING BEARING (HINGE K)," subsection "WORKING DRAWINGS," the sixth paragraph is revised as follows:

"Complete working drawings and supplement shall be submitted to the Engineer within 80 working days after the contract is awarded. After complete working drawings and supplement are received by the Engineer, the Contractor shall allow the Engineer 40 working days to review the submittal. No fabrication of test specimen and test fixtures of the spherical bushing ring bearing shall begin until complete working drawings and supplement are reviewed and a preliminary approval is given, in writing, by the Engineer."

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In the Special Provisions, Section 10-1.42, "FURNISH SPHERICAL BUSHING RING BEARING (HINGE K)," subsection "FRICTION TEST," the second paragraph is revised as follows:

"The acceptance criteria for friction tests shall be the following:

- A. The coefficient of friction value shall be computed by dividing the force parallel to the sliding or rotating surface, which corresponds to sliding or rotating movement by the force normal to the sliding or rotating surface.
- B. The coefficient of friction for all tests shall meet the requirements as specified in the tables as shown on the plans.
- C. No bond failure of wearing surfaces."

In the Special Provisions, Section 10-1.42, "FURNISH SPHERICAL BUSHING RING BEARING (HINGE K)," subsection "WEAR TEST," the second paragraph is revised as follows:

"The acceptance criteria for wear tests shall be the following:

- A. The coefficient of friction for each bearing specimen shall meet the requirements as specified in the tables as shown on the plans."

In the Special Provisions, Section 10-1.43, "TOWER CROSS BRACING SPHERICAL BUSHING BEARING," subsection "WORKING DRAWINGS," the sixth paragraph is revised as follows:

"Complete working drawings and supplement shall be submitted to the Engineer within 80 working days after the contract is awarded. After complete working drawings and supplement are received by the Engineer, the Contractor shall allow the Engineer 40 working days to review the submittal. No fabrication of test specimen and test fixtures of the tower cross bracing spherical bushing bearing shall begin until complete working drawings and supplement are reviewed and a preliminary approval is given, in writing, by the Engineer."

In the Special Provisions, Section 10-1.43, "TOWER CROSS BRACING SPHERICAL BUSHING BEARING," subsection "FRICTION TEST," the second paragraph is revised as follows:

"The acceptance criteria for friction tests shall be the following:

- A. The coefficient of friction value shall be computed by dividing the force parallel to the sliding or rotating surface, which corresponds to sliding or rotating movement by the force normal to the sliding or rotating surface.
- B. The coefficient of friction shall be equal to or less than 0.07.
- C. No bond failure of wearing surfaces."

In the Special Provisions, Section 10-1.43, "TOWER CROSS BRACING SPHERICAL BUSHING BEARING," subsection "WEAR TEST," the second paragraph is revised as follows:

"The acceptance criteria for wear tests shall be the following:

- A. The coefficient of friction for each bearing specimen shall be equal to or less than 0.07."



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In the Special Provisions, Section 10-1.44, "SHEAR KEY (PIER E2)," subsection "WORKING DRAWINGS," the sixth paragraph is revised as follows:

"Complete working drawings and supplement shall be submitted to the Engineer within 80 working days after the contract is awarded. After complete working drawings and supplement are received by the Engineer, the Contractor shall allow the Engineer 40 working days to review the submittal. No fabrication of test specimen and test fixtures of the shear key shall begin until complete working drawings and supplement are reviewed and a preliminary approval is given, in writing, by the Engineer."

In the Special Provisions, Section 10-1.44, "SHEAR KEY (PIER E2)," subsection "FRICTION TEST," the second paragraph is revised as follows:

"The acceptance criteria for friction tests shall be the following:

- A. The coefficient of friction value shall be computed by dividing the force parallel to the sliding or rotating surface, which corresponds to sliding or rotating movement by the force normal to the sliding or rotating surface.
- B. The coefficient of friction for all tests shall meet the requirements as specified in the tables as shown on the plans.
- C. No bond failure of wearing surfaces."

In the Special Provisions, Section 10-1.44, "SHEAR KEY (PIER E2)," subsection "WEAR TEST," the second paragraph is revised as follows:

"The acceptance criteria for wear tests shall be the following:

- A. The coefficient of friction for each bearing specimen shall meet the requirements as specified in the tables as shown on the plans."

In the Special Provisions, Section 10-1.461, "SEISMIC JOINT," subsection "INSTALLATION," the second paragraph is revised as follows:

"The maximum gap between sliding surfaces shall not exceed 2 mm in any loaded or unloaded position."

In the Special Provisions, Section 10-1.48, "HIGH STRENGTH NONSHRINK GROUT," subsection "MATERIALS," the seventh paragraph is replaced by the following paragraphs:

"The Contractor shall construct full scale mock-ups of the following items to demonstrate grout placement methods:

- A. Tower base plate (minimum 1/4 of tower base)
- B. Pier E2 shear key
- C. Pier E2 bearing
- D. West deviation saddle (if the grouted option is selected by the Contractor)

Where the plans show steel surfaces, mock-ups shall be made of steel or other material exhibiting similar surface roughness, as approved by the Engineer. Mock-up surfaces in contact with grout shall be prepared in accordance with the approved working drawings.

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For each mock-up, the Contractor shall take six 150 mm diameter core samples at locations selected by the Engineer. Core samples shall exhibit at least 90% surface area contact between the grout and the mock-up material. The Contractor shall revise the placement method, as required, and shall not place grout in the work until the placement method has been approved by the Engineer.

The mock-ups shall not be part of the permanent structure and shall become the property of the Contractor. They shall be removed from the work site and shall be disposed of in conformance with the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications."

In the Special Provisions, Section 10-1.51, "STEEL STRUCTURES," the second paragraph is revised as follows:

"Fabricators and suppliers shall be certified under the AISC Quality Certification Program, Category Cbr, Major Steel Bridges, with endorsement F, Fracture Critical members, except that certification will not be required for fabrication of the tower strut facade and tower skirt."

In the Special Provisions, Section 10-1.51, "STEEL STRUCTURES," subsection "WORKING DRAWINGS," the last paragraph is revised as follows:

"The Contractor shall allow the Engineer 50 working days to review the structural steel working drawings submittal."

In the Special Provisions, Section 10-1.51, "STEEL STRUCTURES," subsection "ERECTION PLAN," the following paragraph is added after the seventh paragraph:

"At the option of the Contractor, the preliminary erection plan for the tower and box girder may be submitted separately."

In the Special Provisions, Section 10-1.51, "STEEL STRUCTURES," subsection "ERECTION PLAN," the tenth paragraph is revised as follows:

"At the option of the Contractor, lifting attachments may be welded or bolted to structural steel to assist in hoisting the load, except as noted herein. Welds attaching these devices shall conform to the requirements of field welding specified herein. Such attachments shall not interfere with the holes shown on the plans. Open holes shall not remain in the permanent structure, unless otherwise shown on the plans."

In the Special Provisions, Section 10-1.51, "STEEL STRUCTURES," subsection "MATERIALS," the following paragraph is added after the thirteenth paragraph:

"Expandable foam used at the tower strut facade shall be a commercial quality closed-cell polyurethane foam. Polyurethane foam shall be applied in accordance with the manufacturer's recommendations."

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In the Special Provisions, Section 10-1.51, "STEEL STRUCTURES," subsection "FABRICATION," subsection "Quality of Workmanship," the first paragraph is revised as follows:

"Attention is directed to "Clean and Paint Structural Steel" in these special provisions.

All bridge elements shall be cut, trimmed, fabricated and erected to be true at the average bridge temperature, as shown on the plans. All corners of members shall be chamfered to remove sharp edges, unless otherwise shown on the plans. Chamfering is defined as a process by which a sharp corner is flattened by passing a grinder or other suitable device along the corner, normally in a single pass. Chamfering is not required for corners of contacting plates."

In the Special Provisions, Section 10-1.51, "STEEL STRUCTURES," subsection "FABRICATION," subsection "Fabrication/Erection Procedure and Mock-ups," the seventh paragraph is revised as follows:

"The completed steel mock-up shall be examined visually and by UT or RT and by Magnetic Particle (MT) using the nondestructive examination procedures that are proposed for production. Mock-up assemblies shall then be sectioned as directed by the Engineer to produce three macroetch samples per weld type that shall be evaluated per AWS D1.5. Approval of the fabrication and erection procedure and the nondestructive examination procedures shall be contingent on satisfactory results from the mock-up examination and destructive tests."

In the Special Provisions, Section 10-1.51, "STEEL STRUCTURES," subsection "SHOP WELDING," subsection "Welding of Closed Ribs to Box Shell Plate," the last paragraph is revised as follows:

"Production panels shall be tested by ultrasonic examination at the rate specified below. Inspection of the PJP weld shall be in accordance with a written procedure that includes representative calibration standards with a 1.5 mm notch on the rib side and the plate side of the weld; that is demonstrated on a prototype panel segment that includes known flaws; and that is approved by the Engineer before use. Each ultrasonic technician shall be qualified using a mock-up weld with flaws that is approved by the Engineer."

In the Special Provisions, Section 10-1.51, "STEEL STRUCTURES," subsection "FIELD WELDING," Item G of the eighth paragraph is deleted.

In the Special Provisions, Section 10-1.52, "CABLE SYSTEM," subsection "MATERIALS AND FABRICATION," subsection "Cable Wrapping Wire," the second paragraph is revised as follows:

"The S-shaped cable wrapping wire shall be manufactured by the following supplier:

VENDOR ADDRESS AND PHONE NUMBER
NIPPON STEEL CORPORATION 6-3 OTEMACHI 2-CHROME CHIYODA-KU, TOKYO 100-8071 JAPAN
TEL: 81-3-3275-6384 FAX: 81-3-3275-5971
CONTACT: HAJIME HOSOKAWA

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In the Special Provisions, Section 10-1.52, "CABLE SYSTEM," subsection "MATERIALS AND FABRICATION," subsection "Cable Wrapping Wire," the sixth and seventh paragraphs are revised as follows:

"The price quoted by the manufacturer for S-shaped cable wrapping wire is \$6.20 per kilogram. The manufacturer's charge for a technical supervisor is \$1,400 per person per day, and \$28,000 per person per month (20 working days per month). These charges apply from the day of departure from Japan to the day of return back to Japan. The daily allowance for a technical supervisor, including accommodations, shall be \$125 per person per day. The charge for round trip airfare between Japan and San Francisco, California, United States, shall be \$4,200 per person. The FOB location is Yokohama, Japan. Quoted prices are in United States dollars.

The prices quoted will be firm for all orders placed on or before December 31, 2005, provided delivery is accepted within 120 days after the order is placed. The total price will be increased three (3) percent for orders placed after December 31, 2005, provided delivery is accepted within 120 days after the order is placed. The above prices include Japanese taxes, but do not include other taxes, freight, and insurance."

In the Special Provisions, Section 10-1.52, "CABLE SYSTEM," subsection "MATERIALS AND FABRICATION," subsection "Cable Wrapping Wire," the last paragraph is deleted.

In the Special Provisions, Section 10-1.52, "CABLE SYSTEM," subsection "MATERIALS AND FABRICATION," subsection "Steel Castings," the first and second paragraphs are revised as follows:

"Steel castings shall include cable bands, cable strand sockets, suspender sockets, split collars, and suspender separators. Split collars may be machined entirely from billet steel conforming to ASTM Designation: A36 subject to the approval of the Engineer. Similarly, suspender rope separators may be fabricated from carbon steel or other structural steels subject to the approval of the Engineer.

Castings for cable bands, suspender separators and split collars shall conform to the requirements in ASTM Designation: A148M, Grade 550-345. Castings for suspender sockets and cable strand sockets shall conform to the requirements in ASTM Designation: A148M, Grade 620-415. Suspender rope sockets and suspender rope separators shall be galvanized in conformance to the requirements of ASTM Designation: A123."

In the Special Provisions, Section 10-1.52, "CABLE SYSTEM", subsection "MATERIALS AND FABRICATION," subsection "Zinc paste waterproof system", the second paragraph is revised as follows:

"The GriKote Z-Complex 2C system shall be manufactured by the following supplier:

VENDOR ADDRESS AND PHONE NUMBER
GRIGNARD COMPANY 126 PASSAIC STREET NEWARK, NJ 07104
TEL: 973-412-8900 FAX: 973-412-8906
CONTACT: ETIENNE GRIGNARD

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In the Special Provisions, Section 10-1.52, "CABLE SYSTEM," subsection "MATERIALS AND FABRICATION," subsection "Zinc paste waterproof system", the sixth and seventh paragraphs are revised as follows:

"The price quoted by the manufacturer for Grikote Z-Complex 2C is \$11.89 per kilogram. The manufacturer's charge for a factory representative is \$1,200 per day (minimum 4 day visit) for the 3-day periods at the beginning of the application and at the completion of the application. The manufacturer's charge for a factory representative during all other times will be negotiated with the manufacturer. Phone technical support will be provided without charge during normal working hours. The FOB location is Newark, New Jersey 07104. The manufacturer will maintain United States product liability insurance.

The prices quoted will be firm for all orders placed on or before December 31, 2005, provided delivery is accepted within 6 months after the order is placed. For orders placed after December 31, 2005, the total price will be increased 5 percent for each year thereafter, provided delivery is accepted within 6 months after the order is placed. The above prices do not include taxes, freight, and additional insurance."

In the Special Provisions, Section 10-1.53, "TOWER SUSPENDER ASSEMBLY," subsection "TESTING," Item A.1. of the fourth paragraph is revised as follows:

- "1. The total elongation of the rope shall be between three to six percent at the minimum breaking strength."

In the Special Provisions, Section 10-1.62, "CLEAN AND PAINT STRUCTURAL STEEL," is revised as attached.

In the Special Provisions, Section 10-1.64, "CLEAN AND PAINT CABLE SYSTEM," subsection "PAINTING," the second paragraph is revised as follows:

"Primer shall be applied in accordance with the manufacturer's recommendations. The primer shall be spray applied in a fine even spray so as to produce a uniform coating. The dry film thickness of the primer shall be between 35  $\mu$ m and 50  $\mu$ m."

In the Special Provisions, Section 10-1.64, "CLEAN AND PAINT CABLE SYSTEM," subsection "PAINTING," the eleventh paragraph is revised as follows:

"The finish coat shall be applied in accordance with the manufacturer's recommendations. The finish coat shall be applied to produce a uniform coating. The dry film thickness of the finish coat shall be between 35  $\mu$ m and 50  $\mu$ m."

In the Special Provisions, Section 10-1.68, "MISCELLANEOUS METAL (BRIDGE)," the fourth paragraph is revised as follows:

"Miscellaneous metal (bridge) shall consist of the miscellaneous bridge metal items listed in Section 75-1.03, "Miscellaneous Bridge Metal," of the Standard Specifications, and the following:

- A. Pullbox frames and covers
- B. Stairs
- C. Ladders
- D. Fender boarding ladders
- E. Railings, posts, and safety chains in tower and box girders

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- F. Hinged safety railings in tower and box girders (railing S11 modified)
- G. Handrails in tower and box girders
- H. Hinged and bolted access opening covers in tower and box girders
- I. Platforms
- J. Associated hardware"

In the Proposal and Contract, the form titled "MANUFACTURING AND FABRICATION SELF QUALIFICATION AUDIT (MFSQA)" is revised as attached.

In the Proposal and Contract, the forms titled "CALTANS BIDDER – DBE – INFORMATION" for "ALTERNATIVE 1 FOREIGN STEEL AND IRON ALTERNATIVE" and "ALTERNATIVE 2 DOMESTIC STEEL AND IRON ALTERNATIVE" are revised as attached.

In the Proposal and Contract, in the Engineer's Estimate, Alternative 1 and Alternative 2, Items 70, 71, 73, 74, 75, 76, 84, 85, and 101 are revised as attached.

To Proposal and Contract book holders:

Replace pages 31, 32, 33, 39, 40 and 41 of the Engineer's Estimate in the Proposal with the attached revised pages 31, 32, 33, 39, 40 and 41 of the Engineer's Estimate. The revised Engineer's Estimate is to be used in the bid.

Indicate receipt of this addendum by filling in the number of this addendum in the space provided on the signature page of the proposal.

Submit bids in the Proposal and Contract book you now possess. Holders who have already mailed their book will be contacted to arrange for the return of their book.

Inform subcontractors and suppliers as necessary.

This office is sending this addendum by UPS overnight mail to Proposal and Contract book holders to ensure that each receives it. A copy of this addendum and the modified wage rates are available for the contractor's use on the Internet Site:

**[http://www.dot.ca.gov/hq/esc/oe/weekly\\_ads/addendum\\_page.html](http://www.dot.ca.gov/hq/esc/oe/weekly_ads/addendum_page.html)**

If you are not a Proposal and Contract book holder, but request a book to bid on this project, you must comply with the requirements of this letter before submitting your bid.

Sincerely,

ORIGINAL SIGNED BY

REBECCA D. HARNAGEL, Chief  
Office of Plans, Specifications & Estimates  
Office Engineer

Attachments

### 5-1.01 WORKING DRAWINGS

Working drawings shall conform to the requirements in Section 5-1.02 "Plans and Working Drawings," of the Standard Specifications and these special provisions. Working drawings shall include supplements and calculations that are in addition to drawings.

Working drawings shall be submitted to the following location:

California Department of Transportation  
Office of the Resident Engineer, Contract 04-0120F4  
333 Burma Rd.  
Oakland, CA 94607

Working drawings shall conform to the following:

- A. For initial review, 6 sets of the working drawings, shall be submitted. After the Engineer has determined that a submittal is complete, 12 additional sets shall be submitted.
- B. Drawings shall be 559 mm x 864 mm or 279 mm x 432 mm in size. Supplements and calculations shall be 215 mm x 280 mm in size.
- C. For drawings, text size shall be nominally 2.8 mm high, minimum. For supplement and calculations, font size shall be 12, minimum.
- D. Each working drawing sheet and each page of supplement or calculation, shall include the jobsite name of the structure as shown on the contract plans, District-County-Route-Kilometer Post, bridge number and contract number.
- E. Text and details shall be legible and suitable for photocopying and reduction.
- F. In addition to the paper copies of the working drawings, electronic files shall be submitted. Electronic files shall be portable document format (PDF) and shall be submitted on compact disk (CD) media. Each plan sheet shall be a separate PDF file on the CD. The electronic copy of the calculations and supplement shall be made into separate PDF files so that no more than 50 pages are included in a single file on the CD. The CD shall contain an index consisting of the file names and a description of the corresponding file contents. The files shall be listed in the sequence of: 1) index, 2) drawings, 3) supplement, and 4) calculations. If more than one CD is used for a given working drawing submittal, the index shall be included on each CD.
- G. Microfilms are required for approved shop drawings and shall be only a 24x reduction. The edge of the corrected original tracing image shall be clearly visible and visually parallel with the edges of the page. A clear, legible symbol shall be provided on the upper left side of each page to show the amount of reduction, and a horizontal and vertical scale shall be provided on each reduced print to facilitate enlargement to original scale.
- H. After review and approval of the working drawings, between 6 and 12 sets, as requested by the Engineer, shall be submitted to the Engineer for final approval. These sets will be the only sets stamped "Approved" and will be distributed for use during construction.
- I. At the completion of the contract, one compiled set of all approved working drawings (in electronic form and including all corrections and revisions) shall be furnished to the Engineer. The index shall be the first file on the CD.
- J. At the completion of the contract, one set of reduced prints on 75-g/m2 (minimum) bond paper, 279 mm x 432 mm in size, of the corrected original tracings of all approved working drawings, including all corrections and revisions shall be furnished to the Engineer. Reduced prints that are common to more than one structure shall be submitted for each structure. An index prepared specifically for the drawings for each structure containing sheet numbers and titles shall be included on the first reduced print in the set for each structure. Reduced prints for each structure shall be arranged in the order of drawing numbers shown in the index

Working drawings shall be stamped and signed by an engineer who is registered as a Civil Engineer in the State of California. When independently checked calculations are required, these calculations shall be stamped and signed by another engineer who is registered as a Civil Engineer in the State of California.

Working drawings shall be submitted sufficiently in advance of the start of the affected work to allow time for review by the Engineer and correction by the Contractor of the drawings without delaying the work. The time shall be proportional to the complexity of the work, but in no case shall the time be less than the review time as specified for the type of working drawings as required elsewhere in these special provisions.

The Engineer will review a working drawing submittal for completeness. Within three working days of the receipt of the submittal by the Engineer, the Engineer will notify the Contractor in writing if the submittal is determined to be incomplete. If the submittal is determined to be complete, twenty working days from the day of receipt shall be allowed for approval or return for correction of each submittal or resubmittal, unless specified otherwise in the special provisions.

The Contractor shall allow the review times specified in these special provisions after complete working drawings and all supporting data are submitted to the Engineer. The review time for a set of working drawings will be considered as starting when the Engineer has received a complete set of working drawings and all supporting data.

If at any time during the review process, the working drawings are determined to be incomplete or in need of correction, the drawings will be rejected and returned to the Contractor for correction. The review time on a set of returned drawings will be suspended on the date the drawings are date stamped by the Engineer for return. The Contractor shall submit a notice of resubmittal to the Engineer within 5 days after receipt of the rejected set. The notice shall contain the submittal number, revision number, and date the revised set will be returned for review. The revised set shall contain the same work as was originally submitted.

After a revised set of drawings have been received by the Engineer, the new review time for that set of revised drawings will be the original review time, less the time already spent under review before rejection. In no case shall the review time allotted the Engineer upon receipt of a resubmittal be less than 14 days .

Should the Engineer fail to review the complete working drawing submittal within the time specified, and the Contractor's controlling operation on the critical path is delayed (as determined by the Engineer) by the Engineer's failure to review within the time specified, an extension of time will be granted in conformance with the provisions in Section 8-1.07, "Liquidated Damages," of the Standard Specifications and in "Progress Schedule (Critical Path Method)," of these special provisions. Should the Engineer fail to review the complete working drawing submittal within the time specified, compensation, if any, will be made in accordance with Section 8-1.09, "Right of Way Delays," of the Standard Specifications, and "Time Related Overhead," of these special provisions.



#### **10-1.16 WORKING DRAWING SUBMITTAL SCHEDULE**

Attention is directed to "Working Drawings" in these special provisions.

The Contractor shall submit the working drawing submittal schedule in accordance with the requirements of these special provisions.

The Contractor's attention is directed to the section "Progress Schedule (Critical Path Method)" of these special provisions for the definitions of Baseline Schedule and Controlling Operation.

Within 45 days after approval of the contract, the Contractor shall submit to the Engineer for acceptance the working drawing submittal schedule in conjunction with the Baseline Schedule. The working drawing submittal schedule shall include the following:

- A. Name and brief description of all working drawings and supplement including all subsections required by the Standard Specifications and these special provisions.
- B. Reference section of the Standard Specifications or these special provisions for each working drawing submittal.
- C. Allowable time for review of the working drawings by the Engineer as specified in the Standard Specifications and these special provisions.
- D. A time-scaled logic diagram which shows all working drawing submittals, working drawing activities, and demonstrates any interdependency between separate working drawing submittals or partial submittals.
- E. A listing of all working drawing submittals affecting the Controlling/critical path Operation.
- F. Identification of the first occurrence of any Controlling/critical path Operation affected by each working drawing submittal.
- G. A time-scaled diagram showing the estimated number of working drawing submittal sheets to be submitted for the Engineer's review.
- H. In the event that several related working drawing submittals with review times on the controlling/critical path are submitted simultaneously, or an additional working drawing submittal is submitted for review before the review of a previous submittal has been completed, the Contractor shall designate the sequence in which the submittals are to be reviewed.

The Contractor's proposed working drawing submittal schedule shall be in the order of the activities listed in the Baseline Schedule. Working drawing submittal schedules in contradiction with the Baseline Schedule will not be accepted. Items 'D' through 'H,' above, of the working drawing submittal schedule, shall be updated and submitted to the Engineer on a monthly basis in conjunction with the monthly updates provided for under Progress Schedule (Critical Path). The working drawing submittal schedule updates shall reflect actual durations and proposed revisions in durations, resources, and logic.

If working drawing and supplement submittal for any activity is not accepted by the Engineer, the allowable time for review of the working drawings by the Engineer as specified in the Standard Specifications and these special provisions will be reset after a re-submittal is made and the completeness of the re-submittal is checked by the Engineer. No compensation will be allowed for any costs incurred or for delay in completing the work resulting from rejected working drawing submittal. Pursuant to Item 'H,' above, of the working drawing submittal schedule, should the Contractor submit several related working drawing submittals with review times on the controlling/critical path, or an additional working drawing submittal for review before the review of a previous submittal has been completed, the time to be provided for the review of any submittal in the sequence shall be not less than the review time specified for that submittal, plus 7 days for each submittal of higher priority which is still under review, unless specified otherwise in these special provisions.

Full compensation for preparing and submitting the working drawing submittal schedule including all revisions shall be considered as included in the contract lump sum price paid for Progress Schedule (Critical Path), and no additional compensation will be allowed therefor. The initial working drawing schedule submittal, as specified herein, shall be considered a component of the Baseline Schedule provisions of Progress Schedule (Critical Path), and the monthly working drawing schedule update provisions, as specified herein, shall be considered a component of the provisions of Progress Schedule (Critical Path), and the deduction and retention provisions of Progress Schedule (Critical Path) shall apply.

The following table is a summary of the major structural working drawing submittals and the Engineer's initial review times per submittal. This summary is intended as a planning tool and is not a complete list of all submittals. If the review times in this table conflict with review times specified elsewhere in these special provisions, the review times specified elsewhere shall control.

SPECIAL PROVISIONS SECTION	WORKING DRAWING SUBMITTAL	Numbers of Working Days for review
10-1.36	Temporary Tower working drawings and design calculations – each location	50 + 10 days-for each additional submittal
10-1.36	Temporary Tower Foundations-Driving System Submittal	15
10-1.37	Prestressing Concrete- complete working drawings and supplement	60
10-1.38	High Strength Prestressing Rod (75mm) - complete working drawings and supplement	25
10-1.39	Cable Tie Down- complete working drawings	25
10-1.40	Mass Concrete –thermal control plan	20
10-1.40	Falsework – Pier W2 Cap Beam Construction	50
10-1.40	Falsework – Pier E2 Crossbeam Construction	50
10-1.41	Spherical Bushing Bearing (Pier E2) - complete working drawings and supplement	40
10-1.42	Spherical Bushing Ring Bearing (Hinge K) - complete working drawings and supplement	40
10-1.43	Tower Cross Bracing Spherical Bushing Bearing - complete working drawings and supplement	40
10-1.44	Shear Key (Pier E2) - complete working drawings and supplement	40
10-1.45	Circular Segmented Bearing (Hinge A) - complete working drawings and supplement	20
10-1.47	Polyester Concrete Overlay (13mm) – public safety plan	10
10-1.48	High Strength Nonshrink Grout) - complete working drawings and supplement	35
10-1.51	Structural steel working drawings	50
10-1.51	Structural Steel - erection working drawings	50

SPECIAL PROVISIONS SECTION	WORKING DRAWING SUBMITTAL	Numbers of Working Days for review
10-1.51	Structural Steel – weight control procedure	20
10-1.51	Pipe Beam installation system working drawings and supplemental design calculations	25
10-1.51	Steel casting fabrication and erection procedures	50
10-1.52	Cable System working drawings	60
10-1.53	Tower Suspender working drawings	20
10-1.56	Traveler Scaffolds – complete drawings and all supplemental data	50
10-1.58	Sign structure working drawings	30
10-1.61	Plastic lumber working drawings	20
10-1.62 10-1.63	Painting Quality Work Plan	10

#### **10-1.62 CLEAN AND PAINT STRUCTURAL STEEL**

Exposed new metal surfaces shall be cleaned and painted in conformance with the provisions in Section 59-2, "Painting Structural Steel," and Section 91, "Paint," of the Standard Specifications and these special provisions. Exposed surfaces include all surfaces exposed to the atmosphere.

Section 59-2.01, "General," of the Standard Specifications is amended by adding the following paragraph after the first paragraph:

- Unless otherwise specified, painting Contractors or subcontractors shall be required to have the following certifications from the "SSPC: The Society for Protective Coatings" (formerly the Steel Structures Painting Council), prior to performing the work:
  - A. For cleaning and painting of structural steel in the field, certification in conformance with the requirements in Qualification Procedure No. 1, "Standard Procedure For Evaluating Painting Contractors" (SSPC-QP 1).
  - B. For the removal of paint from structural steel, certification in conformance with the requirements in Qualification Procedure No. 2, "Standard Procedure For Evaluating The Qualifications of Painting Contractors To Remove Hazardous Paint" (SSPC-QP 2).
  - C. For cleaning and painting of structural steel in a permanent painting facility, certification in conformance with the requirements in Qualification Procedure No. 3, "Standard Procedure For Evaluating Qualifications of Shop Painting Contractors" (SSPC-QP 3). The AISC's Sophisticated Paint Endorsement (SPE) quality program will be considered equivalent to SSPC-QP 3.

Whenever the Standard Specifications refer to "Steel Structures Painting Council," the reference shall be replaced with "SSPC: The Society for Protective Coatings."

Attention is directed to "Metallizing" of these special provisions for surface coating the inside of saddle troughs.

The Contractor shall provide suitable enclosures to permit cleaning and painting during inclement weather. Provisions shall be made to control atmospheric conditions inside the enclosures within limits suitable for cleaning throughout the cleaning operation, painting throughout the painting operation, drying throughout the drying period to solvent insolubility, and throughout the curing period per the manufacturers' recommendations and these special provisions. Full compensation for providing and maintaining such enclosures shall be considered as included in the prices paid for the various contract items of work requiring paint and no additional compensation will be allowed therefor.

No extension of contract time will be granted and no additional compensation will be allowed as a result of temperature or humidity which exceeds the limits for cleaning or painting designated herein, except as approved by the Engineer.

The Contractor shall ensure that all cleaning and painting operations are done in conformance with the coating manufacturer's requirements. A manufacturer's representative shall be present to provide technical assistance during all cleaning and painting operations. The manufacturer shall provide written instructions that include recommendations for cleaning, painting, drying, curing, handling, shipping, and storage of coated steel. These instructions shall be available for review at the pre-painting meeting. The manufacturer's representative shall provide monthly written certification as to the Contractor's conformance with the manufacturer's requirements. If there is a conflict between the manufacturer's requirements and those specified herein, the conflicts shall be resolved at the pre-painting meeting and the Engineer shall be the final judge as to which requirements shall prevail.

Full compensation for services of the manufacturer's technical representative shall be considered as included in the contract price paid for the various items of work involved and no separate payment will be allowed therefor.

#### **APPLICATION**

Application of coatings shall be done in conformance with the requirements of SSPC-PA 1.

Fresh, potable water with a maximum chloride content of 75 mg/L and a maximum sulfate content of 200 mg/L shall be used for water rinsing or pressure washing operations. Water shall be single use. No continuous recycling of rinse water will be permitted. If rinse water is collected into a tank and subsequent testing determines that the collected water conforms to specified requirements, reuse may be permitted at the discretion of the Engineer, as long as no collected water is added to the tank after sample collection for determination of conformance to specified requirements. Water from water rinsing operations shall not be permitted to enter the bay, fall on public traffic, flow across shoulders or lanes occupied by public traffic, or to flow into gutter or other drainage facilities. Water rinsing is defined as a pressurized water rinse with a minimum nozzle pressure of 35 MPa and a minimum flow rate of 15 liters per minute.

Prior to submitting the Painting Quality Work Plan (PQWP) required herein, a pre-painting meeting between the Engineer, the Contractor's QCM, a representative from each entity performing painting for this project, and a representative from the manufacturer to provide the paint, shall be held to discuss the requirements for the Painting Quality Work Plan.

Prior to performing any painting or paint removal, the Contractor shall submit to the Engineer, in conformance with the provisions in "Working Drawings," of these special provisions, 3 copies of a separate Painting Quality Work Plan (PQWP) for each item of work for which painting or paint removal is to be performed. As a minimum, each PQWP shall include the following:

- A. The name of each entity performing painting or paint removal.
- B. One copy each of all current "SSPC: The Society for Protective Coatings" specifications or qualification procedures, and one copy of all ASTM Standards which are applicable to the painting or paint removal to be performed. These documents shall become the permanent property of the Department.
- C. A copy of the manufacturer's guidelines and recommendations for cleaning, painting, drying, curing, handling, shipping, and storage of the product.
- D. Proposed methods and equipment to be used for any paint application.
- E. Proof of each of any required certifications, SSPC-QP 1, SSPC-QP 2, SSPC-QP 3, AISC SPE.
- F. Proposed methods to control environmental conditions in accordance with the manufacturer's recommendations and these special provisions.
- G. Proposed method to protect the product during curing, shipping, handling, and storage.
- H. Proposed rinse water collection plan.
- I. For all coatings, the PQWP shall contain the manufacturer's written recommendations on chloride testing methods, maximum allowable chloride levels, and surface preparation.
- J. A paint repair plan for the repair of damaged areas.
- K. A procedure for containing blast media and water during application of finish coats and/or repair of coating of erected steel.

The Engineer shall have 14 calendar days to review the PQWP submittal after a complete plan has been received. No painting or paint removal shall be performed until the PQWP for that work is approved by the Engineer.

It is expressly understood that the Engineer's approval of the Contractor's PQWP shall not relieve the Contractor of any responsibility under the contract for the successful completion of the work in conformity with the requirements of the plans and specifications. The Engineer's review shall not constitute a waiver of any of the requirements of the plans and specifications nor relieve the Contractor of any obligation thereunder, and defective work, materials, and equipment may be rejected notwithstanding review of the PQWP.

#### **CLEANING**

Exposed new metal surfaces, except where galvanized or metallized, shall be dry blast cleaned in conformance with the requirements in Surface Preparation Specification No. 10, "Near White Blast Cleaning," of "SSPC: The Society for Protective Coatings." Blast cleaning shall leave surfaces with a dense, uniform, sharp angular anchor pattern of not less than 40  $\mu\text{m}$  nor more than 86  $\mu\text{m}$  as measured in conformance with the requirements in ASTM Designation: D 4417.

Mineral and slag abrasives used for blast cleaning steel shall conform to the requirements in Abrasive Specification No. 1, "Mineral and Slag Abrasives," of "SSPC: The Society for Protective Coatings" and shall not contain hazardous material. Mineral and slag abrasives shall comply with the requirements for Class A, Grade 2 to 3 as defined therein.

Steel abrasives used for blast cleaning steel surfaces shall comply with the requirements of SSPC-AB 3, "Newly Manufactured or Re-Manufactured Steel Abrasives" of "SSPC: The Society for Protective Coatings". If steel abrasive is recycled through shop or field abrasive blast cleaning units, the recycled abrasive shall conform to the requirements of SSPC-AB 2 "Specification for Cleanliness of Recycled Ferrous Metallic Abrasives" of "SSPC: The Society for Protective Coatings". The abrasive size and type shall be selected and maintained so as to achieve the required surface profile.

A Certificate of Compliance conforming to the provisions in Section 6-1.07, "Certificates of Compliance," of the Standard Specifications and a Material Safety Data Sheet shall be furnished prior to use for each shipment of blast cleaning material for steel.

The inside surfaces of bolt holes shall be cleaned in conformance with the requirements in Surface Preparation Specification No. 1, "Solvent Cleaning," of the "SSPC: The Society for Protective Coatings," and visible rust shall be removed.

Abrasive blast cleaned surfaces shall be tested by the Contractor for soluble salts in conformance with the requirements in SSPC: The Society for Protective Coatings Technical Update No. 4, "Field Methods for Retrieval and Analysis of Soluble Salts on Substrates" and cleaned, if necessary, so that the maximum level of chlorides does not exceed the lesser of the coating manufacturer's written recommendations or 10 micrograms per square centimeter. Areas of abrasive blast cleaned steel shall be tested for chlorides at the rate of one test per 200 square meters or part thereof at locations chosen by the Engineer. If chloride levels exceed the maximum allowed by these special provisions, the entire 200 square meter area represented by the testing will be rejected. The Contractor shall perform additional cleaning and testing of rejected areas until chloride levels conform to these requirements.

Chloride testing of abrasive blast cleaned steel may be waived by the Engineer if the steel has not been manufactured, transported or stored in a marine or salt-containing environment. A salt-containing environment includes roads or highways where deicing salts have been used.

### **MATERIAL ANOMALIES**

Corners shall be chamfered to remove sharp edges.

Chamfering is defined as a process by which a sharp corner is flattened by passing a grinder or other suitable device along the corner, normally in a single pass.

Preparation of Thermal Cut Edges – Thermal cut edges (TCEs) to be painted shall be conditioned before blast cleaning,

Edge conditioning is defined as very shallow grinding or other pre-blast cleaning preparation of thermal cut edges (TCEs) to remove a thin, hardened layer left by resolidification.

Base Metal Surface Irregularities –All visually evident surface defects shall be removed in accordance with ASTM A 6 or AASHTO M 160 prior to blast cleaning steel. When material defects exposed by blast cleaning are removed, the blast profile must be restored by either blast cleaning or by using mechanical tools in accordance with SSPC-SP 11.

### **PAINTING**

Blast cleaned surfaces shall receive a single undercoat of inorganic zinc primer and, unless otherwise specified, a single finish coat of an inorganic thermosetting hybrid coating based upon a polysiloxane resin co-reacted or blended with an epoxy, acrylic, or urethane resin or combination thereof supplied by the manufacturer of the inorganic zinc coating.

The single undercoat shall consist of an inorganic zinc coating conforming to the requirements in AASHTO Designation M 300, Type 1- or Type II, except that: 1) the first 3 sentences of Section 5.6, "Primer Field Performance Requirements," shall not apply for Type II coatings and the entire Section 5.6.1 shall not apply for either type of inorganic zinc coating.

If the Contractor proposes a Type 1 coating, the Contractor shall furnish to the Engineer for approval documentation as required in Section 5.6 of AASHTO Designation M300. The Contractor shall allow the Engineer 30 working days to review the proposal.

If the Contractor proposes to use a Type II coating, the coating shall be selected from the qualified products list, which may be obtained from the Transportation Laboratory.

The inside surfaces of bolt holes shall be maintained free from visible corrosion until final assembly or recleaned prior to assembly so as to remove all visible corrosion. After assembly, the inside surface of bolt holes that are not sealed by bolts or washers shall be painted with two applications of a zinc rich primer (organic vehicle type) after completion of all applications of the undercoat of inorganic zinc on adjacent steel. Application of primer to the inside surfaces of bolt holes will require removal and replacement of the fastener assembly. If rust staining on coated surfaces occurs, all stains shall be completely removed by abrasive blast cleaning and reapplication of primer to specified requirements prior to application of finish coats. Finish coats are not required for the inside surfaces of bolt holes.

Inorganic zinc coating shall be used within 12 hours of initial mixing.

Application of inorganic zinc coating shall conform to the provisions for applying zinc-rich coating in Section 59-2.13, "Application of Zinc-Rich Primer," of the Standard Specifications.

Inorganic zinc coating shall not be applied when the atmospheric or surface temperature, or relative humidity does not conform with the manufacturer's published application requirements. The single undercoat of inorganic zinc coating shall be applied to the required dry film thickness in 2 or more applications within 4 hours after blast cleaning. No significant time needs to elapse between the two paint applications. A commonly used procedure to satisfy this requirement is to apply horizontal passes with 50% overlap, followed by vertical passes with 50% overlap.

The total dry film thickness of all applications of the inorganic zinc undercoat, including the surfaces of outside existing members within the grip under bolt heads, nuts and washers, shall be not less than 90  $\mu\text{m}$  nor more than 150  $\mu\text{m}$ , except that the total dry film thickness on each faying (contact) surface of high strength bolted connections shall be between 25  $\mu\text{m}$  and the maximum allowable dry film thickness as determined by certified testing in conformance with Appendix A of the "Specification for Structural Joints Using ASTM A325 or A490 Bolts" of the Research Council on Structural Connections (RCSC Specification). Unless otherwise specified, all coatings used on faying surfaces shall meet the slip coefficient requirements for a Class B coating on blast-cleaned steel, as specified in the RCSC Specification. The Contractor shall provide results of certified testing showing the maximum allowable dry film thickness for the Class B coating from the qualifying tests for the coating he has selected, and shall maintain the coating thickness on actual faying surfaces of the structure at or below this maximum allowable coating thickness.

Areas where mudcracking occurs in the inorganic zinc coating shall be blast cleaned and repainted with inorganic zinc coating to the specified thickness.

Dry spray, or overspray, as defined in the Steel Structures Painting Manual, Volume 1, "Good Painting Practice," of the "SSPC: The Society for Protective Coatings," shall be removed prior to application of subsequent coats or final acceptance. Removal of dry spray shall be by screening or other methods that minimize polishing of the inorganic zinc surface. The dry film thickness of the coating after removal of dry spray shall be in conformance with the provisions for applying the single undercoat, as specified herein.

The inorganic zinc coating shall be tested for adhesion, hardness and chlorides. All tests shall be done in the presence of the Engineer or his designated representative unless otherwise directed by the Engineer in writing. Additional testing as defined in this section shall also be required for water borne inorganic zinc and solvent borne inorganic zinc coatings. The Engineer will determine the locations of the tests. The Contractor shall determine the sequence of the rinsing and testing operations. At the Contractor's expense, satisfactory access shall be provided to allow the Engineer to determine the location of the tests.

The following tests shall be performed on both water borne inorganic zinc primers and solvent borne inorganic zinc primers:

1. Adhesion

The inorganic zinc coating shall have a minimum adhesion to steel of 4 MPa. Testing shall be performed at a minimum frequency of 1 test per 100 square meters of painted area using a self-aligning adhesion tester in conformance with the requirements in ASTM Designation: D 4541. The Contractor, at the Contractor's expense, shall: (1) verify compliance with the adhesion requirements, (2) furnish test results to the Engineer, and (3) repair the coating after testing.

2. Chlorides and Water Rinsing

Except as approved by the Engineer, a minimum time of 72 hours shall be allowed between application of inorganic zinc coating and water rinsing.

All areas of inorganic zinc coating, where finish coats are specified, shall be water rinsed in conformance with the requirements in Section 59-1.03 "Application," of the Standard Specifications and these special provisions. Areas of the coating that are removed by the water rinsing shall be reapplied in conformance with the provisions for applying zinc-rich coating in Section 59-2.13, "Application of Zinc-Rich Primer," of the Standard Specifications and these special provisions.

All areas of inorganic zinc coating where finish coats are to be applied shall be tested by the Contractor for soluble salts in conformance with the requirements in SSPC: The Society for Protective Coatings Technical Update No. 4, "Field Methods for Retrieval and Analysis of Soluble Salts on Substrates" and cleaned, if necessary, so that the maximum level of chlorides does not exceed the lesser of the manufacturer's written recommendations or 10 micrograms per square centimeter. Areas of inorganic zinc coating shall be tested for chlorides at the rate of one test per 200 square meters or part thereof at locations chosen by the Engineer. If chloride levels exceed the maximum allowed by these special provisions, the entire 200 square meter area represented by the testing will be rejected. The Contractor shall perform additional cleaning and testing of rejected areas until chloride levels conform to these requirements.

Finish coat shall be applied to areas passing the chloride tests within 48 hours.

3. Hardness

Prior to application of finish paint, the inorganic zinc coating shall exhibit a solid, hard, and polished metal surface when firmly scraped with the knurled edge of a quarter. Inorganic zinc coating that is powdery, soft, or does not exhibit a polished metal surface, as determined by the Engineer, shall be repaired by the Contractor, at the Contractor's expense, by blast cleaning and repainting with inorganic zinc coating to the specified thickness.

**Additional Requirements for Water Borne Inorganic Zinc Primers**

1. Steel painted with water borne inorganic zinc primer shall be protected at all times from water immersion conditions during curing, shipping, and storage until the surface pH, measured as described herein, is less than or equal to 7, and until the coating passes the solvent insolubility test described below. Water immersion conditions are defined as standing water or continuous contact with wet materials for periods in excess of 30 minutes. The Contractor, at the Contractor's expense, shall repair damage caused due to immersion conditions by blast cleaning and repainting with inorganic zinc coating to the specified thickness.

2. The surface pH of the inorganic zinc primer shall be tested by wetting the surface with de-ionized water for a minimum of 15 minutes and no longer than 30 minutes and applying pH paper with a capability of measuring in increments of 0.5 pH units. At least two surface pH readings shall be taken for each 50 square meters or portion thereof. If less than 50 square meters of steel is coated in a single shift or day, at least two surface pH readings shall be taken for primer applied during that period. Application of finish coats will not be permitted until the surface pH is less than or equal to 7.
3. Dry to solvent insolubility for water borne inorganic zinc primers shall be determined in conformance with the requirements in ASTM Designation: D4752, "Standard Test Method for Measuring MEK Resistance of Ethyl Silicate (Inorganic) Zinc-Rich Primers by Solvent Rub" except that water shall be the solvent. The resistance rating shall not be less than 4. Areas of inorganic zinc coating shall be tested for solvent insolubility at the rate of one test per 50 square meters or portion thereof. Inorganic zinc coating that does not meet the solvent insolubility requirement shall be repaired by the Contractor, at the Contractor's expense, by blast cleaning and repainting with inorganic zinc coating to the specified thickness.

#### **Additional Requirements for Solvent Borne Inorganic Zinc Primers**

1. Dry to solvent insolubility for solvent borne inorganic zinc primers shall be determined in conformance with the requirements in ASTM Designation: D4752, "Standard Test Method for Measuring MEK Resistance of Ethyl Silicate (Inorganic) Zinc-Rich Primers by Solvent Rub." The resistance rating shall not be less than 4. Areas of inorganic zinc coating shall be tested for solvent insolubility at the rate of one test per 50 square meters or portion thereof. Inorganic zinc coating that fails to meet the solvent insolubility requirement shall be repaired by the Contractor, at the Contractor's expense, by blast cleaning and repainting with inorganic zinc coating to the specified thickness. The Contractor shall maintain suitable enclosures to protect the inorganic zinc coating from damage caused by the environment until the coating passes this test and is fully cured per the manufacturer's written recommendations.

#### **Finish Paint**

Except as noted, exterior surfaces of undercoated areas and bolts shall receive a single finish coat of an inorganic thermosetting hybrid coating based upon a polysiloxane resin co-reacted or blended with an epoxy, acrylic, or urethane resin or combination thereof supplied by the manufacturer of the inorganic zinc coating. The coating shall not contain any isocyanate or polyisocyanate components. Exterior surfaces are defined as steel surfaces undercoated with inorganic zinc which are visible in the finished work from the outside of the bridge.

The surface of the undercoat that is to be covered shall be free from moisture, visible dust, visible grease, or other deleterious materials immediately prior to application of finish paint.

Galvanized or metallized surfaces designated to receive finish paint shall be cleaned in accordance with the requirements of SSPC-SP 1 and then primed with a galvanized surface primer recommended by the manufacturer of the polysiloxane finish paint. The complete finish paint system on galvanized fasteners shall have a minimum adhesion rating of 4 when measured in accordance with ASTM D 3359.

Finish coats will not be required on exterior surfaces receiving an overlay.

Finish coats are not required on interior surfaces. Interior surfaces are defined as steel surfaces undercoated with inorganic zinc not visible from the outside of the bridge and include, but are not limited to, the inside surfaces of the box girder, crossbeams and tower shafts.

At the Contractor's option, the finish coat shall be applied in accordance with one of the following two methods:

1. Field applied after meeting the requirements of these special provisions.
2. Shop coated after meeting the manufacturer's recommendations regarding curing of the inorganic zinc primer, meeting the finish coat manufacturer's recommendations for application over primed surfaces, and meeting the requirements of these special provisions.

The finish coat shall be field applied within 48 hours following water rinsing and passing the chloride testing as specified previously in this section. Chloride testing prior to shop application of finish coats may be waived by the Engineer if the steel has not been transported or stored in a marine or salt containing environment. A salt-containing environment includes, but is not limited to, roads or highways where de-icing salts have been used.



The finish coat paint shall be formulated for application to inorganic zinc coating and shall conform to the following:

Exposure Test	Exposure Time	Measurement Test/ Minimum Criteria	
		Color Retention per ASTM D 2244 (Color change in $\Delta E^*$ )	Maximum Gloss Reduction from Original Reading per ASTM D 523
Accelerated Weathering <sup>c</sup> (ASTM D 4587, Cycle 2)	4,000 hours	<2.0	10%
TEST METHOD		CRITERIA	
Solvent resistance (ASTM D 5402)	100 double rubs with MEK	No visible topcoat on cloth, No softening (ASTM D 3363)	
Adhesion to primed steel (ASTM D 4541, Type III, IV or V)		Minimum 5 Mpa. Adhesion greater than 4 Mpa satisfies this requirement if failure is in primer.	
Adhesion to galvanized steel (ASTM D 3359, Procedure A, surface cleaned per SSPC-SP 1 and primed with manufacturer's recommended galvanized surface primer)		Minimum 4 A	
Dry-Through (or Dry-To-Handle) Time (ASTM D 1640)		8 hours maximum	
Abrasion Resistance (ASTM D 4060), 1000 cycles, CS17 wheel, 1 Kg load		< 0.125 g loss	
Mandrel Bend (ASTM D 522, Method B), 125µm dry film applied to abraded steel plate		No cracking on 12.7 mm mandrel	
Water Resistance (ASTM D 870), 125µm dry film on primed steel, cured 7-days.		No change in color or gloss after 7-days. Adhesion greater than 4 Mpa after 48-hours recovery	

The finish coat shall be applied in 2 applications. The first application shall consist of a spray applied mist application. The second application shall be applied after the mist application has dried to a set to touch condition as determined by the procedure described in Section 7 of ASTM Designation: D1640. The finish coat color shall match Federal Standard 595B No. 26408. The total dry film thickness of both applications of the finish coat shall be not less than 125 µm.

The total dry film thickness of all applications of inorganic zinc coating and finish coat paint shall be not less than 200 µm nor more than 325 µm.

#### Handling, Storage, and Erection

Due care shall be exercised in handling the steel in the shop, during shipping, during erection, and during subsequent construction of the bridge. The steel shall be insulated from the binding chains by softeners approved by the Engineer. Hooks and slings used to hoist steel shall be padded. Diaphragms and similar pieces shall be spaced in such a way that no rubbing that may damage the coatings will occur during shipment. The steel shall be stored on pallets at the job site or by other means approved by the Engineer, so that it does not rest on the dirt, so that water pockets are not formed, and so that components do not fall or rest on each other. All shipping and job site storage details shall be submitted for approval in the PQWP.

**Field Repair of Damaged Areas**

Field repair painting shall comply with all provisions specified in the special provisions.

Damaged areas of paint and areas which do not comply with the requirements of this specification shall have the paint removed and all defects corrected. The steel shall then be blast cleaned to a near white condition to produce a profile of between 1.0 to 3.5 mils [25 to 90  $\mu\text{m}$ ]. This profile shall be measured immediately prior to the application of the undercoat to ensure that the profile is not destroyed during the feathering procedure. All abrasive blasting and painting shall be done as specified herein.

The existing paint must be feathered to expose a minimum of 13 mm of each coat. During the re-application of the paint, care must be used to ensure that each coat of paint is only applied within the following areas. The undercoat shall only be applied to the surface of the bare steel and the existing undercoat, which has been exposed by feathering. The finish coat shall not extend beyond the areas which have been feathered or lightly sanded. All repairs shall be made in a manner to blend the patched area with the adjacent coating. The finished surface of the patched area shall have a smooth even profile with the adjacent surface. The first repair area shall be used as a test section and no more repairs made until the methods are approved by the Engineer. Finish coat repairs shall be applied by either brush or spray. Damaged paint which will be inaccessible for coating after erection shall be repaired and recoated prior to erection.

**PAYMENT**

Payment for clean and paint structural steel shall conform to the provisions in Section 59-2.16, "Payment," of the Standard Specifications and these special provisions.

Cleaning and painting structural steel, of the types listed in the Engineer's Estimate, will be paid for on the basis of lump sum price.

Full compensation for water rinsing and conforming to the requirements for testing outlined in these special provisions, including providing access for testing and repairing painted surfaces, and for services of the manufacturer's technical representative shall be considered as included in the contract lump sum price paid for clean and paint structural steel of the types listed in the Engineer's Estimate and no additional compensation will be allowed therefor.

## MANUFACTURING AND FABRICATION SELF QUALIFICATION AUDIT

**NAME OF COMPANY:**

**DATE:**

**LOCATION: CITY/STATE/COUNTRY:**

**BID ITEM NUMBERS/DESCRIPTION:**

**FACILITY'S QUALITY CONTROL REPRESENTATIVE:**

**NAME OF AUDITORS:**

Bidders/Contractors shall complete the attached "Manufacturing and Fabrication Self Qualification Audit," (MFSQA) form, and shall submit it to the Engineer as part of the formal request for an audit, as specified in Sections 8-4.01, "Audits," and 2-1.03, "Pre-Award Information/Questionnaire," of the contract special provisions.

Steel Manufacturers and Fabricators are only required to answer Sections A through L. Fastener Manufacturers are only required to answer Sections M through S. Steel cable Manufacturers are only required to answer Sections T through V. Foundries are required to answer Sections A through G, J through L, and W.

A detailed explanation shall accompany every answer. The detailed information provided should either explain how the facility is currently meeting the contract requirements (if answered "Yes") or explain how the facility intends to meet the contract requirements (if answered "No") or how this particular question is not applicable for this facility (if answered "NA"). Please attach additional sheets as needed to provide complete responses to the questions. Additional sheets that are attached must be numbered, and references made to the attached sheets must mention the specific page number in which the supporting documents are located. During the Department audit the same questions in the MFSQA attached herein will be asked. Additionally, the Department will access the overall ability of the fabrication facility to meet the Contract Documents. Each Manufacturer and Fabricator will be evaluated per the requirements of Section 8-4.01, "Audits," of the contract special provisions.

We the undersigned have read and understand the "Manufacturing and Fabrication Self Qualification Audit," self-evaluation checklist and the contract special provisions pertaining to this audit, and are providing the following information.

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Contractor's	Quality	Control	Manager:
Date:			
(to be signed after contract is awarded)			

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Facility's	Authorized	Quality	Control	Representative
Date:				

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Contractor:
Date:
(to be signed before contract is awarded)

# MANUFACTURING AND FABRICATION SELF QUALIFICATION AUDIT (MFSQA)

## A. FABRICATION SPECIFICATIONS AND STANDARDS

		YES	NO	NA	DETAILED INFORMATION
1.	Does the Fabricator/Manufacturer have a copy of the most recent CALTRANS specifications? List the version(s).				
2.	Does the Fabricator/Manufacturer have a copy of AWS D1.5-2002, D1.1-2000, D1.6-1999, and D1.4-1998?				
3.	Does the Fabricator/Manufacturer have the latest revisions of all material specifications referenced in the contract (e.g. ASTM, ANSI)? List the version(s) and compare with specifications listed in the contract.				
4.	Does the Fabricator/Manufacturer have personnel that are knowledgeable and experienced with the material codes and specifications referenced in the contract? Attach resumes to verify the experience and knowledge.				
5.	Is there a written procedure in place to disseminate specification requirements and changes to appropriate personnel? Attach a copy of this procedure and identify appropriate personnel.				
6.	Does the fabricator hold a current AISC Certification? Attach a copies of AISC certifications held.				

**B. READING / INTERPRETING SHOP DRAWINGS**

		YES	NO	NA	DETAILED INFORMATION
1.	Does the Fabricator/Manufacturer have personnel capable of supervising, evaluating and coordinating shop drawing preparation and review? Identify these personnel and provide resumes.				
2.	Will the shop drawings to be prepared denote materials to be utilized in the final structure? Provide a list of materials to be provided.				
3.	Will the shop drawings identify fracture critical members and welds, when applicable?				
4.	Does the Fabricator/Manufacturer have a written procedure for insuring materials and processes specified or indicated on the shop drawings agree with this contract's material requirements for work ongoing in the shop?				

### C. DRAWING CONTROL

		YES	NO	NA	DETAILED INFORMATION
1.	Does the Fabricator or Manufacturer have a written procedure for tracking design drawings as follows.  a. ____ receipt? b. ____ on file? c. ____ revisions?  Attach a copy of this procedure.				
2.	Does the tracking procedure utilized trace each phase from drawing preparation, showing receipt, submittal for approval, approval, re-submittals and date sent to shop for fabrication? Explain this procedure.				
3.	Will the shop plans correspond to the latest revision? Attach the procedure for revision. Identify the person responsible for ensuring that the latest version is in the work area?				
4.	Does the quality control manual address how the shop drawings will be in accordance with ANSI Y14.5M, "Dimensioning and Tolerancing," or other comparable industry standards. Identify the standard being used. Explain how drawings will be in accordance with these standards.				

**D. WORK ORDER – JOB CONTROL**

		YES	NO	NA	DETAILED INFORMATION
1.	Does the Fabricator/Manufacturer have an established job control number and identification system for all work completed and accepted by in-house QC?  Explain how this system is defined in the quality control manual.				
2.	Are all received correspondence marked with a distinguishable identifying mark?  What is this mark? Who makes it?				
3.	Are correspondence files maintained and segregated for each project? Where are they stored?				
4.	Is received correspondence a. ____ stamped received? b. ____ dated? c. ____ initialed?				
5	Is the Work Order/Job Control process defined in the QCM				

**E. MATERIAL PROCUREMENT AND SUBCONTRACTS**

		YES	NO	NA	DETAILED INFORMATION
1.	Are purchase orders or any other type of material procurement forms on file for verification and documentation of the orders? Where are the files kept?				
2.	Will the materials be ordered or procured to the required standards and specifications specified in the corresponding contract documents? Who is responsible for ordering?				
3.	Will the Fabricator's or Manufacturer's procurement documents require that his suppliers must furnish material testing reports (MTR's)? If no, why not?				
4.	Will the procurement documents state how the material should be marked and identified? If no, why not?				
5.	Is the QCM written to assure that subcontracted fabrication is ordered to contract requirements? Explain this procedure				

## F. MATERIAL RECEIVING

		YES	NO	NA	DETAILED INFORMATION
1.	Is there an established written procedure for the reception of materials and subassemblies? Provide this procedure.				
2.	Are reception inspections done to all incoming materials and subassemblies arriving at this facility? Who is responsible for reviewing the order when it is received?				
3.	Does the materials and subassemblies receiving inspector confirm and document the following: a. ____ proper grade of material? b. ____ proper material marking and identification? c. ____ proper material dimensions? d. ____ compliance with dimensional tolerances? e. ____ heat numbers on material match heat numbers on corresponding mill certificates?				
4.	Are receiving inspections documented for: a. ____ acceptance and rejection of nonconforming materials and subassemblies? b. ____ corrective actions taken to deal with non-correctable and correctable non-conformities observed during the reception inspection?  Where are these records kept?				
5.	Are acceptance tolerances available for reference at the receiving inspection station?				
6.	Does the Fabricator or Manufacturer have a material identification system to assure control of materials of different grade and size (as applicable)? What is this system?				
7.	Does the Fabricator or Manufacturer segregate controlled materials by project? Explain.				
8.	Does the Fabricator/Manufacturer have mill test reports (MTR's) for all material currently in fabrication?				



9.	Will MTR's be traceable to stored or stocked material? Explain the tracking system.				
10.	Will materials be stored or stocked so as to prevent damage to the raw materials or final fabricated pieces?				
11.	Will the stored or stocked materials be clearly marked or identified?				

**G. EQUIPMENT/FACILITIES, HANDLING AND STORAGE PROCEDURES**

		YES	NO	NA	DETAILED INFORMATION
1.	Does the Fabricator or Manufacturer have adequate equipment for production that is in compliance with the contract specifications, drawings and applicable codes? Attach list of the available equipment.				
2.	Is the material handling equipment adequate for the type of work to be done?				
3.	<p>Does the Fabricator or Manufacturer have adequate written procedures that describe or illustrate the proper way to:</p> <ul style="list-style-type: none"> <li>a. ____ handle materials in the yard?</li> <li>b. ____ handle materials in the plant?</li> <li>c. ____ move in process materials and subassemblies?</li> <li>d. ____ provide correct bracing and blocking for materials and subassemblies?</li> <li>e. ____ prevent material and subassembly deterioration?</li> <li>f. ____ provide correct storage for fabricated products?</li> <li>g. ____ handle and ship fabricated products?</li> </ul> <p>Attach a copy of this procedure.</p>				

## H. WELDING AND WELDING CONSUMABLES

		YES	NO	NA	DETAILED INFORMATION
1.	Does the Fabricator/Manufacturer have welding procedure specifications and procedure qualification records per contract documents? Identify these documents.				
2.	Are the Fabricator's/Manufacturer's welders certified in conformance with CALTRANS and AWS requirements?				
3.	Do the Fabricator's/Manufacturer's procedures address the requirements of AWS D1.5, Sections 2 "Design of Welded Connections" and 3.4 "Control of Distortion and Shrinkage"? Explain.				
4.	Is the QCM written to assure that subcontracted fabrication is ordered to contract requirements?				
5.	Are approved welding procedures readily available or posted near all welding machines?				
6.	Do welders know and understand which WPS is to be used with each specific weld?				
7.	Are welded structures and specific welds traceable to the welder(s) and or welding crew that completed the job? How?				
8.	Does the Fabricator/Manufacturer have and properly maintain appropriate equipment for preheat and interpass heating? What is this equipment?				
9.	Are maximum interpass and minimum WPS preheat temperatures properly monitored? How?				
10.	Are flame cut edges inspected by quality control inspectors to verify compliance with AWS D1.5, D1.1, D1.4 and is an AWS C4.1-G Oxygen Cutting Surface Roughness Gauge available?				
11.	Do quality control inspectors verify and document joint fit-up before welding?				
12.	Do the quality control inspectors verify and document the utilization of WPSs? If no, why not?				

13.	Are meters and other devices used to record or display welding variables checked for accuracy every three months?				
14.	Is the equipment used for verifying meters and other devices certified annually?				
15.	Are welding consumables stored in accordance with AWS D1.5, D1.1, or D1.4?				
16.	Are welding consumables at the work station protected from contamination and damage?				
17.	Does the Fabricator or Manufacturer control the exposure time of low-hydrogen SMAW electrodes following removal from hermetically sealed containers, drying ovens, or storage ovens? Explain this control system.				
18.	Are consumable manufacturer certification reports on file and available?				

## I. HIGH-STRENGTH BOLTING

		YES	NO	NA	DETAILED INFORMATION
1.	Are copies of the current RCSC and all appropriate ASTM Specifications available in the assembling facility?				
2.	Does a written procedure exist for sampling, testing, and approving high-strength fasteners and fastener components prior to use by the Fabricator or Manufacturer? Attach this procedure.				
3.	Does the Fabricator or Manufacturer have copies of all required test reports for fastener components (i.e., bolts, nuts, washers, and DTIs according to requirements in appropriate ASTM specifications)?				
4.	Does the Fabricator or Manufacturer have manufacturer's installation instructions for TC bolts and DTIs, if applicable?				
5.	Are written procedures available to conduct high-strength bolting: a. ____ Installation verification tests? b. ____ Rotational capacity test? c. ____ Job inspection torque determination? d. ____ long and short bolts testing? Attach these procedures.				
6.	Are procedures in place to perform installation verification tests of each lot of fasteners at a frequency as required in the RCSC Specification? Explain.				
7.	Does the equipment on hand for high-strength bolting, include: a. ____ a bolt tension measuring device with appropriate bushings? b. ____ a set of tapered feeler gages for inspecting DTIs? c. ____ a torque wrench with dial or digital readout? d. ____ a pneumatic or electric wrench with a positive mechanism that activates when proper tension is reached?				

8.	Has the contractor's bolting equipment (torque wrench, calibrated wrench, bolt load meter, torque multiplier) been calibrated by an accredited testing lab? Attach a copy.				
9.	Is the accredited testing lab's calibration equipment traceable to NIST standards?				
10.	Has each piece of equipment been calibrated within the past year?				
11.	Are calibration curves and plots on hand and is the accuracy of the equipment within acceptable tolerances?				
12.	If the turn-of-nut installation procedure is being used, is the match-marking procedure properly understood and utilized?				
13.	Is the sealing compound used to seal sheared ends of TC bolts: a. ____ of the type recommended by RSCS? b. ____ Applied to the correct thickness? c. ____ Applied as soon as TC bolts have been sheared?				
14.	Has the paint used in faying surfaces been tested and qualified for the maximum thickness and the minimum cure time specified in the contract specifications for bolting plates?				
15.	Are procedures available to ensure that hot-dip-galvanized faying surfaces are: a. ____ flat and free from runs or globs? b. ____ roughened by hand wire brushing?				
16.	Will bolt tension of all completed bolted joints be inspected and documented immediately after each joint has been completed using the arbitration method of the RCSC Specification?				

17.	<p>Are all fastener components properly stored and handled to ensure that:</p> <p>a. ____ components are covered and protected from moisture?</p> <p>b. ____ unused components are returned to their original containers at the end of each shift?</p> <p>c. ____ different lots are stored separately to maintain integrity between lots?</p>				
18.	Does the Fabricator or Manufacturer use drill templates with hardened bushings when drilling bolt holes?				

**J. COATING PROCESS**

		YES	NO	NA	DETAILED INFORMATION
1.	Are the facilities and equipment suitable for performing cleaning and painting in conformance with the specifications for this contract? Describe how.				
2.	Does a written procedure exist that addresses:  a. ____ measuring and recording temperature?  b. ____ measuring and recording humidity?  c. ____ measuring and recording wet film thickness?  d. ____ measuring and recording dry film measurements?  Provide a copy of this procedure.				
3.	Are the facilities and equipment suitable for performing galvanizing in conformance with appropriate ASTM specifications?				
4.	Are thickness measurements of galvanized surfaces performed and documented?				
5.	Does a written repair procedure exist for repair of galvanizing holidays?				
6.	Does the coating facility have a copy of the manufacturer's recommendations for use with the application of the coating?				
7.	Does the coating facility have a current AISC Sophisticated Paint Endorsement or SSPC-QP3 Certification? Attach the certification.				

**K. QUALITY CONTROL AND QUALITY CONTROL INSPECTORS**

		YES	NO	NA	DETAILED INFORMATION
1.	Does the Fabricator or Manufacturer have a written Quality Control Manual that describes the company policy, support and commitment to quality? Provide a copy of this manual.				
2.	Does the Fabricator or Manufacturer have a written job description and an organizational chart that reflects its commitment to quality?				
3	Does the Quality control Manual include sections that deal with: a. Contract review? b. Documents and drawings control? c. Materials purchasing? d. Product identification and traceability? e. Process control? f. Inspection and testing? g. Control of inspection, measuring and test equipment? h. Control of nonconforming products? i. Corrective and preventive actions? j. Handling and storage? k. Packaging and delivery? l. Internal audits? m. Manual review and update?				
4.	Does the Fabricator have a registered Certified Welding Inspector (CWI) on his full time staff or on contract? Provide the name(s), resume(s), and responsibilities on this contract.				
5.	Are Quality Control personnel assigned for this project available in the plant for the inspection audit as required in the Contract documents?				
6.	Does the Fabricator have certified NDT personnel on his full time staff? Identify their responsibilities.				



7.	Does the Fabricator have adequate qualified personnel to handle all NDT (or sub-contractors to provide adequate NDT?). If subcontractors are used, list the subcontracted NDT firms.				
8.	Are the qualifications of the Fabricator's subcontractor verified by the Fabricator?				
9.	Does the Fabricator or Manufacturer have certifications for all inspection personnel (staff and subcontractor) on file and readily available?				
10.	Does the Fabricator or Manufacturer have a copy of the written practice for NDT on file?				
11.	Does the written practice meet or exceed the recommendations of the most recent version of SNT-TC-1A?				
12.	Does the Fabricator or Manufacturer maintain documentation for all quality control testing?				
13.	<p>Do quality control inspectors have sufficient equipment to adequately perform their tasks</p> <p>a. ____tape line?</p> <p>b. ____calipers?</p> <p>c. ____tag systems?</p> <p>d. ____fillet weld gages?</p> <p>e. ____chipping hammer?</p> <p>f. ____magnifying glass?</p> <p>g. ____amp tongs?</p> <p>h. ____paint gages?</p> <p>i. ____flashlight?</p> <p>j. ____preheat &amp; interpass temperature measuring and testing devices?</p> <p>k. ____mirror?</p>				
14.	<p>Does the Fabricator or Manufacturer have written procedures for:</p> <p>a. ____ minor repairs?</p> <p>b. ____ major repairs?</p> <p>c. ____ documentation for re-inspection of repairs?</p>				

15.	Are quality control personnel conversant with the quality control requirements?				
16.	Does the Fabricator or Manufacturer maintain a quality control program that is independent from production?				
17.	Do the quality control inspectors have the responsibility of informing line foreman and superintendent when observing any non-conforming work processes and performances?				
18.	Does the CWI have sufficient authority to stop work in order to prevent unacceptable work from proceeding? Explain any existing process for preventing unacceptable work.				

**L. COMPLETED MEMBER STORAGE AND FINAL INSPECTION**

		YES	NO	NA	DETAILED INFORMATION
1.	Does the Fabricator or Manufacturer understand that there is a 48-hr. notification period required prior to final Engineer inspection, and, for overseas inspection where Caltrans inspectors are not stationed on a full time basis, there is a 2 week notification period?				
2.	Is the Fabricator or Manufacturer aware that they must provide complete paper work, including a certificate of compliance and weights, for final inspection?				
3.	Will the Fabricator or Manufacturer have the material located, accessible, and identified for final inspection?				
4.	Does the facility have an adequate storage area to allow completed members to be stored without damage.				
5.	Are all primary load-carrying components traceable to MTR's?				
6.	Is the fabricator aware of the specification requirements for corner preparation of all steel corners to be painted.				
7.	Does the Fabricator or Manufacturer understand that material release tags shall be completed and attached only by the Engineer or his authorized representative?				

**M. QUALIFICATION REQUIREMENTS FOR FASTENER MANUFACTURERS**

		YES	NO	NA	DETAILED INFORMATION
1.	Does the Manufacturer mark the fasteners, as required by ASTM specification, with a unique identification-marking symbol that is registered with the U.S. Patent and Trademark Office?				
2.	Is the fastener Manufacturer currently certified to Quality System (QS) 9000?				
3.	Was the accreditation granted by an approved (Caltrans acknowledged) third party accreditation agency?				
4.	Was the Manufacturer certified using a (QS) 9000 Standard no older than the 3 <sup>rd</sup> Edition?				
5.	Does the manufacturer have adequate facilities and machinery to manufacture the fastener components? Attach a list of the available equipment.				
6.	Does the manufacturer have adequate gages and quality control tools to evaluate the compliance of fastener components with specifications? Attach a list of the available equipment.				
7.	Have samples of all fastener components (or similar components) to be furnished for the contract been tested and approved by Caltrans prior to the Manufacturer producing fastener components for the contract?				
8.	Do appropriate personnel from the fastener manufacturer have a copy of the ASTM F1470 specification?				
9.	Do the Manufacturer personnel have knowledge and understanding of the ASTM F1470 specification?				
10.	Did the Manufacturer verify that all the Secondary Processors have detailed QC Plans and that they are certified to the QS 9000 standard?				
11.	Have all the Secondary Processors (including zinc coating processors and heat treaters) been audited by the fastener manufacturer to verify compliance with Quality Control requirements?				

12.	Did the Manufacturer verify that the Secondary Processors have copies of all appropriate consensus standards for the product they are treating?				
13.	Are all fastener components and systems re-tested and re-certified by the prime Manufacturer or Distributor after all secondary processing is completed?				
14.	Have all fastener components been tested by a testing laboratory acknowledged by Caltrans or recognized and approved by NIST?				
15.	Did the Manufacturer verify that the testing laboratory meets requirements of ISO/IEC Guides 25 and/or 58?				
16.	Did the Manufacturer verify that appropriate personnel from their testing laboratory have a copy of the ASTM F1470 specification?				
17.	Does the testing laboratory have testing procedures and copies of standard documents related to testing of fastener products? Identify these documents.				
18.	Does the technician doing the testing have copies of the testing procedures?				
19.	Have samples of all test reports (as listed in appropriate ASTM specifications) been reviewed and approved by Caltrans?				
20.	Does the Manufacturer provide acceptable installation instructions for alternate fastener systems (i.e., TC bolts and DTT's) or fastener components?				
21.	Do lubricants used by manufacturer on zinc-coated products comply with Caltrans and ASTM requirements for: a. ___ Cleanliness and Dryness to touch? b. ___ Color and dye? c. ___ Solubility in water?				
22.	What is type and model number of the lubricant?				

**N. MATERIAL RECEIVING**

		YES	NO	NA	DETAILED INFORMATION
1.	Is there an established written procedure for the reception of materials? Provide a copy of this procedure.				
2.	Are reception inspections done to all incoming materials arriving at this facility?				
3.	Does the manufacturer's inspector confirm and document: a. ____ proper grade of material? b. ____ proper material marking and identification? c. ____ proper material dimensions? d. ____ compliance with dimensional tolerances? e. ____ heat numbers on material match heat numbers on corresponding mill certificates?				
4.	Are receiving inspections documented for: a. ____ acceptance and rejection of nonconforming materials and subassemblies? b. ____ corrective actions taken to deal with non-correctable and correctable nonconformity's observed during the reception inspection?				
5.	Are acceptance tolerances available for reference at the receiving inspection station?				
6.	Does the Manufacturer have a material identification system to assure control of materials of different heats, lots, and grade (as applicable)?				
7.	Does the Manufacturer keep each lot of material segregated and identify so as to maintain lot integrity of all materials throughout the manufacturing process?				
8.	Does the Fabricator/Manufacturer have mill test reports (MTR's) for all material currently in fabrication?				
9.	Are MTR's traceable to stored or stocked material?				

10.	Are materials stored or stocked so as to prevent damage to the raw materials or completed fastener components?				
11.	Are the stored or stocked materials clearly segregated, and marked or identified by lot number?				

**O. EQUIPMENT/FACILITIES, HANDLING AND STORAGE PROCEDURES**

		YES	NO	NA	DETAILED INFORMATION
1.	Does the Manufacturer have adequate equipment for fabrication of the products according to the contract. Attach list of the available equipment.				
2.	Is the material handling equipment adequate for the type of work being done?				
3.	Does the Manufacturer have adequate written procedures that describe or illustrate the proper way to: a. ____ handle materials in the yard? b. ____ handle materials in the plant? c. ____ move in-process materials and subassemblies? d. ____ provide correct bracing and blocking for materials and subassemblies? e. ____ prevent material and subassembly deterioration? f. ____ provide correct storage for fabricated products? g. ____ handle and shipping of fabricated products?				

**P. COATING PROCESS**

		YES	NO	NA	DETAILED INFORMATION
1.	Are the facilities and equipment suitable for performing galvanizing in accordance with ASTM specifications?				
2.	Are thickness measurements of galvanized surfaces performed and documented?				
3.	Is the maximum coating thickness controlled so as not to be excessive?				
4.	Are suitable gages and instruments available to check various thread dimensions (thread pitch, major and minor diameters, etc.) after galvanizing?				

5.	Has lot integrity and segregation been maintained throughout the coating process? (i.e., each lot clearly marked and segregated before, during and after processing)				
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**Q. HEAT TREATING PROCESS**

		YES	NO	NA	DETAILED INFORMATION
1.	Are the facilities and equipment suitable for performing heat treating in accordance with appropriate ASTM specifications?				
2.	Is the equipment adequate to produce a quality product with consistent hardness and a tight hardness range?				
3.	Is the equipment used for quenching and tempering adequate to control bath temperature, so as to produce fastener components with consistent hardness and metallurgical properties?				

**R. QUALITY CONTROL AND QUALITY CONTROL INSPECTORS**

		YES	NO	NA	DETAILED INFORMATION
1.	Does the Manufacturer have a written Quality Control Manual that describes the company policy, support and commitment to quality? Provide a copy of this manual.				
2.	Does the Manufacturer have a written job description and an organizational chart that reflect its commitment to quality?				
3	Does the quality control manual include sections that deal with:				
	a. Materials purchasing?				
	b. Product identification and traceability?				
	c. Process control?				
	d. Inspection and testing?				
	e. Control of inspection, measuring and test equipment?				
	f. Control of nonconforming products?				
	g. Corrective and preventive actions?				
	h. Handling and storage?				
	i. Packaging and delivery?				

4.	Is all quality control testing documented?				
5.	Are quality control personnel conversant in the quality control requirements?				
6.	Is quality control independent from production?				

**S. STORAGE AND FINAL INSPECTION OF COMPLETED FASTENER COMPONENTS**

		YES	NO	NA	DETAILED INFORMATION
1.	Are manufactured products properly stored to prevent damage?				
2.	Are all components properly packaged and marked per ASTM requirements?				
3.	Are zinc-coated components of fastener systems properly packaged together as an assembly?				
4.	Will each assembly lot be tested as a rotational capacity lot and given a Rocap lot number?				
5.	Is the Fabricator aware that he must provide complete paper work, including a certificate of compliance and weights, for final inspection?				

**T. MANUFACTURE OF ZINC COATED STEEL WIRE**

		YES	NO	NA	DETAILED INFORMATION
1.	Does the manufacturer have an on-site materials laboratory to confirm mechanical properties and dimensional tolerances, of the rod and wire?				
2.	Does the facility have adequate equipment for production wire drawing, zinc coating, coiling of wire and storage of wire?				
3.	Does the lab have accredited on-site or off-site means of checking the chemical composition of wire?				
4.	Does the tool room have calibrated gauges and tools to control the shape of the dies?				



**U. MANUFACTURE OF WIRE ROPE ASSEMBLIES**

		YES	NO	NA	DETAILED INFORMATION
1.	Does the manufacturer have on site material laboratory to confirm chemical and physical properties of the wire and completed wire rope assemblies?				
2.	Does the manufacturer's shop have a prestretching rig of sufficient capacity for the rope assemblies to be manufactured?				
3.	Are the load indicating and measuring devices of the prestretching rig calibrated and certified at least annually?				
4.	Does the manufacturer's shop have socketing capacity required for the wire rope assemblies?				
5.	Does the manufacturer have personnel capable of supervising the socketing, prestretching, measuring and reeling of wire rope assemblies?				
6.	Does the manufacturer have adequate facilities for storage and adequate means of packing/transporting the finished wire rope?				

**V. PRE-FABRICATED PARALLEL WIRE STRAND (PPWS)**

		YES	NO	NA	DETAILED INFORMATION
1.	Does the facility have adequate equipment for production of the PPWS?				
2.	Does the facility have adequate equipment to establish the length of the PPWS?				
3.	Does the taping station have the ability to adequately maintain the strand compact cross section?				
4.	Does the facility have the proper strand socket equipment?				
5.	Is the equipment adequately maintained and tested?				
6.	Does the manufacturer have the proper personnel to supervise the production?				
7.	Does the facility have adequate means of storing/protecting the wire prior to assembly of the cable, after fabrication of the cable, and during shipping?				

CONTRACT NO. 04-0120F4

REVISED PER ADDENDUM NO. 17 DATED DECEMBER 15, 2003

**W. MANUFACTURE AND FINISHING OF CAST STEEL BRIDGE COMPONENTS**

		YES	NO	NA	DETAILED INFORMATION
1.	Does the manufacturer have on site dimensional control, calibration and verification capabilities?				
2.	Does the manufacturer have on-site materials laboratory to confirm chemical and physical properties plus non-destructive testing capabilities – Visual Examination, Magnetic Particle Testing, Dye Penetrant Testing, Radiographic and Ultrasonic Examination adequate to perform testing in accordance with the contract documents?				
3.	Are the materials properly handled, stored and prepared for shipping?				
4.	Does the manufacturer have the machining capabilities necessary for component fabrication?				
5.	Does the manufacturer have adequate pattern making capabilities including core boxes and molding methods				
6.	Does the manufacturer have adequate storage facilities for patterns?				
7.	Does the manufacturer have sufficient heat treating capabilities?				
8.	Does the manufacturer have in-house capability to produce a finite element model? If not, who will produce this model?				
9.	Does the manufacturer have the capability to perform metallizing in accordance with the specifications?				

Additional Observations/comments:

ALTERNATIVE 1  
FOREIGN STEEL AND IRON ALTERNATIVE  
CALTRANS BIDDER - DBE - INFORMATION

**-- DO NOT DETACH --**  
**THIS INFORMATION SHALL BE SUBMITTED WITH YOUR  
BID PROPOSAL**

DISTRICT-CO.-RTE.-K.P.: \_\_\_\_\_  
DISTRICT-CONTRACT NO.: \_\_\_\_\_  
BID AMOUNT: \$ \_\_\_\_\_  
BID OPENING DATE: \_\_\_\_\_  
BIDDER'S NAME: \_\_\_\_\_  
DBE GOAL FROM CONTRACT, %: \_\_\_\_\_  
DBE PRIME CONTRACTOR CERTIFICATION <sup>1</sup>: \_\_\_\_\_

CONTRACT ITEM NO.	ITEM OF WORK AND DESCRIPTION OR SERVICES TO BE SUBCONTRACTED OR MATERIALS TO BE PROVIDED <sup>2</sup>	FOR CALTRANS USE ONLY	NAME OF DBEs (Must be certified on the date bids are opened - include Caltrans certification # , DBE address and phone number)	DOLLAR AMOUNT DBE <sup>3</sup>
<p><b>IMPORTANT: Identify all DBE firms being claimed for credit, regardless of tier. Names of the First Tier DBE Subcontractors and their respective item(s) of work listed above shall be consistent, where applicable, with the names and items of work in the "List of Subcontractors" submitted with your bid pursuant to the Subcontractors Listing Law and Section 2-1.01, "General," of the Special Provisions. Copies of the DBE quotes are required PURSUANT TO Section 2-1.02B, "Submission of DBE Information," of the Special Provisions.</b></p> <p>1. DBE prime contractors shall enter their DBE certification number. DBE prime contractors shall indicate all work to be performed by DBEs including work performed by its own forces.</p> <p>2. If 100% of item is not to be performed or furnished by DBE, describe exact portion of item to be performed or furnished by DBE.</p> <p>3. See Section 2-1.02, "Disadvantaged Business Enterprise," to determine the credit allowed for DBE firms.</p>			<b>Total Claimed Participation</b>	\$ _____  _____ %
			Signature of Bidder _____  Date _____ (Area Code) Tel. No. _____  Person to Contact _____ (Please Type or Print)	

CT Bidder - DBE Information (06-02-03)

ALTERNATIVE 2  
DOMESTIC STEEL AND IRON ALTERNATIVE  
CALTRANS BIDDER - DBE - INFORMATION

**-- DO NOT DETACH --**  
**THIS INFORMATION SHALL BE SUBMITTED WITH YOUR**  
**BID PROPOSAL**

DISTRICT-CO.-RTE.-K.P.: \_\_\_\_\_  
DISTRICT-CONTRACT NO.: \_\_\_\_\_  
BID AMOUNT: \$ \_\_\_\_\_  
BID OPENING DATE: \_\_\_\_\_  
BIDDER'S NAME: \_\_\_\_\_  
DBE GOAL FROM CONTRACT, %: \_\_\_\_\_  
DBE PRIME CONTRACTOR CERTIFICATION <sup>1</sup>: \_\_\_\_\_

CONTRACT ITEM NO.	ITEM OF WORK AND DESCRIPTION OR SERVICES TO BE SUBCONTRACTED OR MATERIALS TO BE PROVIDED <sup>2</sup>	FOR CALTRANS USE ONLY	NAME OF DBEs (Must be certified on the date bids are opened - include Caltrans certification # , DBE address and phone number)	DOLLAR AMOUNT DBE <sup>3</sup>
<p><b>IMPORTANT: Identify all DBE firms being claimed for credit, regardless of tier. Names of the First Tier DBE Subcontractors and their respective item(s) of work listed above shall be consistent, where applicable, with the names and items of work in the "List of Subcontractors" submitted with your bid pursuant to the Subcontractors Listing Law and Section 2-1.01, "General," of the Special Provisions. Copies of the DBE quotes are required PURSUANT TO Section 2-1.02B, "Submission of DBE Information," of the Special Provisions.</b></p> <p>1. DBE prime contractors shall enter their DBE certification number. DBE prime contractors shall indicate all work to be performed by DBEs including work performed by its own forces.</p> <p>2. If 100% of item is not to be performed or furnished by DBE, describe exact portion of item to be performed or furnished by DBE.</p> <p>3. See Section 2-1.02, "Disadvantaged Business Enterprise," to determine the credit allowed for DBE firms.</p>			<b>Total Claimed Participation</b>	\$ _____  _____ %
			_____ Signature of Bidder  _____ Date (Area Code) Tel. No.  _____ Person to Contact (Please Type or Print)	

CT Bidder - DBE Information (06-02-03)

# ENGINEER'S ESTIMATE

04-0120F4

## ALTERNATIVE 1

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
61	BLANK					
62	BLANK					
63	BLANK					
64 (S)	BLANK					
65	BLANK					
66 (S-F)	520102	BAR REINFORCING STEEL (BRIDGE)	KG	1 410 000		
67 (S-F)	520110	BAR REINFORCING STEEL (EPOXY COATED) (BRIDGE)	KG	140 370		
68 (F)	550203	FURNISH STRUCTURAL STEEL (BRIDGE)	KG	183 000		
69 (F)	550204	ERECT STRUCTURAL STEEL (BRIDGE)	KG	183 000		
70 (F)	049314	FURNISH STRUCTURAL STEEL (BRIDGE)(TOWER)	KG	13 150 000		
71 (F)	049315	ERECT STRUCTURAL STEEL (BRIDGE)(TOWER)	KG	13 150 000		
72 (F)	049316	FURNISH STRUCTURAL STEEL (BRIDGE)(TOWER STRUT)	EA	68		
73 (F)	049317	FURNISH STRUCTURAL STEEL (BRIDGE) (BOX GIRDER)	KG	29 065 000		
74 (F)	049318	ERECT STRUCTURAL STEEL (BRIDGE) (BOX GIRDER)	KG	29 065 000		
75 (F)	049319	FURNISH STRUCTURAL STEEL (BRIDGE) (BIKEPATH)	KG	1 273 000		
76 (F)	049320	ERECT STRUCTURAL STEEL (BRIDGE) (BIKEPATH)	KG	1 273 000		
77 (S-F)	049321	FURNISH STRUCTURAL STEEL (BRIDGE) (SADDLE)	KG	1 130 000		
78 (F)	049322	ERECT STRUCTURAL STEEL (BRIDGE)(SADDLE)	KG	1 130 000		
79 (S-F)	049323	FURNISH AND INSTALL SHEAR KEY (PIER E2)	EA	2		
80 (F)	049324	FURNISH STRUCTURAL STEEL (BRIDGE) (PIPE BEAM)	KG	260 000		

# ENGINEER'S ESTIMATE

04-0120F4

## ALTERNATIVE 1

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
81 (F)	049325	ERECT STRUCTURAL STEEL (BRIDGE) (PIPE BEAM)	KG	260 000		
82 (F)	049326	INSTALL STRUCTURAL STEEL (BRIDGE) (PIPE BEAM)(HINGE A)	EA	4		
83	049327	FURNISH STRUCTURAL STEEL (BRIDGE) (PIPE BEAM FUSE)	EA	4		
84 (S-F)	049328	FURNISH PWS CABLE SYSTEM	KG	4 800 000		
85 (S-F)	049329	ERECT PWS CABLE SYSTEM	KG	4 800 000		
86 (S-F)	049330	FURNISH SUSPENDER SYSTEM	KG	650 000		
87 (S-F)	049331	ERECT SUSPENDER SYSTEM	KG	650 000		
88 (S)	049332	TOWER SUSPENDER ASSEMBLIES	LS	LUMP SUM	LUMP SUM	
89	030712	SERVICE PLATFORM	EA	5		
90	560218	FURNISH SIGN STRUCTURE (TRUSS)	KG	9200		
91	560219	INSTALL SIGN STRUCTURE (TRUSS)	KG	9200		
92	562002	METAL (BARRIER MOUNTED SIGN)	KG	1020		
93 (S-F)	049333	PLASTIC LUMBER	M3	99		
94 (S-F)	049334	UHMW POLYETHYLENE PANEL (50 MM)	M2	637		
95 (S)	590115	CLEAN AND PAINT STRUCTURAL STEEL	LS	LUMP SUM	LUMP SUM	
96 (S)	049335	CLEAN AND PAINT STRUCTURAL STEEL (TOWER)	LS	LUMP SUM	LUMP SUM	
97 (S)	049336	CLEAN AND PAINT STRUCTURAL STEEL (BOX GIRDER)	LS	LUMP SUM	LUMP SUM	
98 (S)	049337	CLEAN AND PAINT STRUCTURAL STEEL (BIKEPATH)	LS	LUMP SUM	LUMP SUM	
99 (S)	049338	CLEAN AND PAINT CABLE SYSTEM	LS	LUMP SUM	LUMP SUM	
100	030757	MISCELLANEOUS METAL (CABLE TRAY SUPPORT)	KG	2110		

# ENGINEER'S ESTIMATE

04-0120F4

## ALTERNATIVE 1

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
101 (S-F)	750501	MISCELLANEOUS METAL (BRIDGE)	KG	250 000		
102	030713	PERIMETER FENCE (TYPE WM 1.8)	M	410		
103 (S-F)	833020	CHAIN LINK RAILING	M	130		
104 (S-F)	049339	STEEL BARRIER (TYPE 732 MODIFIED)	M	2490		
105 (S-F)	049340	BIKEPATH RAILING	M	1246		
106 (F)	839527	CABLE RAILING (MODIFIED)	M	3000		
107 (F)	839717	CONCRETE BARRIER (TYPE 732 MODIFIED)	M	7		
108	840515	THERMOPLASTIC PAVEMENT MARKING	M2	18		
109	840561	100 MM THERMOPLASTIC TRAFFIC STRIPE	M	7500		
110	030715	75 MM PAINT TRAFFIC STRIPE (BLACK, 1-COAT)	M	2500		
111	840656	PAINT TRAFFIC STRIPE (2-COAT)	M	590		
112	840666	PAINT PAVEMENT MARKING (2-COAT)	M2	8		
113	850101	PAVEMENT MARKER (NON-REFLECTIVE)	EA	1390		
114	850111	PAVEMENT MARKER (RETROREFLECTIVE)	EA	440		
115	030716	UNDERGROUND	LS	LUMP SUM	LUMP SUM	
116	049341	ELECTRICAL UTILITIES REMOVAL	LS	LUMP SUM	LUMP SUM	
117 (S)	049342	ELEVATOR	LS	LUMP SUM	LUMP SUM	
118 (F)	049343	MAINTENANCE TRAVELER	LS	LUMP SUM	LUMP SUM	
119 (S-F)	049344	MAINTENANCE TRAVELER (BIKEPATH)	LS	LUMP SUM	LUMP SUM	
120 (S-F)	049345	TRAVELER SUPPORT RAIL	KG	398 570		

**ENGINEER'S ESTIMATE**

**04-0120F4**

**ALTERNATIVE 2**

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
61	BLANK					
62	BLANK					
63	BLANK					
64 (S)	BLANK					
65	BLANK					
66 (S-F)	520102	BAR REINFORCING STEEL (BRIDGE)	KG	1 410 000		
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71 (F)	049315	ERECT STRUCTURAL STEEL (BRIDGE)(TOWER)	KG	13 150 000		
72 (F)	049316	FURNISH STRUCTURAL STEEL (BRIDGE)(TOWER STRUT)	EA	68		
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74 (F)	049318	ERECT STRUCTURAL STEEL (BRIDGE) (BOX GIRDER)	KG	29 065 000		
75 (F)	049319	FURNISH STRUCTURAL STEEL (BRIDGE) (BIKEPATH)	KG	1 273 000		
76 (F)	049320	ERECT STRUCTURAL STEEL (BRIDGE) (BIKEPATH)	KG	1 273 000		
77 (S-F)	049321	FURNISH STRUCTURAL STEEL (BRIDGE) (SADDLE)	KG	1 130 000		
78 (F)	049322	ERECT STRUCTURAL STEEL (BRIDGE)(SADDLE)	KG	1 130 000		
79 (S-F)	049323	FURNISH AND INSTALL SHEAR KEY (PIER E2)	EA	2		
80 (F)	049324	FURNISH STRUCTURAL STEEL (BRIDGE) (PIPE BEAM)	KG	260 000		



# ENGINEER'S ESTIMATE

04-0120F4

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84 (S-F)	049328	FURNISH PWS CABLE SYSTEM	KG	4 800 000		
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88 (S)	049332	TOWER SUSPENDER ASSEMBLIES	LS	LUMP SUM	LUMP SUM	
89	030712	SERVICE PLATFORM	EA	5		
90	560218	FURNISH SIGN STRUCTURE (TRUSS)	KG	9200		
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94 (S-F)	049334	UHMW POLYETHYLENE PANEL (50 MM)	M2	637		
95 (S)	590115	CLEAN AND PAINT STRUCTURAL STEEL	LS	LUMP SUM	LUMP SUM	
96 (S)	049335	CLEAN AND PAINT STRUCTURAL STEEL (TOWER)	LS	LUMP SUM	LUMP SUM	
97 (S)	049336	CLEAN AND PAINT STRUCTURAL STEEL (BOX GIRDER)	LS	LUMP SUM	LUMP SUM	
98 (S)	049337	CLEAN AND PAINT STRUCTURAL STEEL (BIKEPATH)	LS	LUMP SUM	LUMP SUM	
99 (S)	049338	CLEAN AND PAINT CABLE SYSTEM	LS	LUMP SUM	LUMP SUM	
100	030757	MISCELLANEOUS METAL (CABLE TRAY SUPPORT)	KG	2110		

# ENGINEER'S ESTIMATE

04-0120F4

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104 (S-F)	049339	STEEL BARRIER (TYPE 732 MODIFIED)	M	2490		
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110	030715	75 MM PAINT TRAFFIC STRIPE (BLACK, 1-COAT)	M	2500		
111	840656	PAINT TRAFFIC STRIPE (2-COAT)	M	590		
112	840666	PAINT PAVEMENT MARKING (2-COAT)	M2	8		
113	850101	PAVEMENT MARKER (NON-REFLECTIVE)	EA	1390		
114	850111	PAVEMENT MARKER (RETROREFLECTIVE)	EA	440		
115	030716	UNDERGROUND	LS	LUMP SUM	LUMP SUM	
116	049341	ELECTRICAL UTILITIES REMOVAL	LS	LUMP SUM	LUMP SUM	
117 (S)	049342	ELEVATOR	LS	LUMP SUM	LUMP SUM	
118 (F)	049343	MAINTENANCE TRAVELER	LS	LUMP SUM	LUMP SUM	
119 (S-F)	049344	MAINTENANCE TRAVELER (BIKEPATH)	LS	LUMP SUM	LUMP SUM	
120 (S-F)	049345	TRAVELER SUPPORT RAIL	KG	398 570		